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21.8.52.

ON THE

I N F L U E N Z A,

OR

EPIDEMIC CATARRHAL FEVER

OF 1847-8.

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## P R E F A C E.

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INFLUENZA has been known in Europe, as an epidemic disease, since the middle of the 13th century. Notices are preserved of six visitations in the 14th century, and of four in the 15th; but these accounts being mainly those of the ordinary chroniclers of the period, are necessarily very meagre and imperfect.

Since the commencement of the 16th century, the disease has been more attentively studied by the profession; and the periods of appearance of the more general and severe epidemics,—the circumstances which attended their outbreak and progress,—and their characteristic symptoms, have, in several instances, been fully and carefully recorded. In the 16th century, the disease is related to have prevailed epidemically nine times; in the 17th century, we have accounts of twelve visitations; in the 18th, of sixteen; and during the present century, there have already been six.

Of the epidemics on record, several, as those of 1510, 1557, 1732, 1743, 1782, 1803, and 1837, extended their range from Asia, through Russia and Turkey, to the countries of western Europe, and, in some instances, to America: others were either confined within narrower limits, or possessing less striking features, attracted less attention. During the last 150 years, the disease has prevailed epidemically, at intervals varying from three or four, to ten or fifteen years.

The interesting task of compiling a general history of the Influenza, has already been performed, with more or less fulness, by Ozanam,\* Petit,† Dr. Hancock,‡ Delorme,§ Dr. Copland,|| and Dr. Theophilus Thomson.¶ I have also been informed, that a similar work is preparing for publication by the Sydenham Society. There is therefore little inducement to enter on a fresh investigation of this branch of the subject.

So far, however, as I am aware, no comprehensive account of the recent epidemic has yet appeared in this country. The very elaborate reports of the Registrar-General, to which I have been very largely indebted in the earlier part of my labours, valuable and interesting as is the information they afford, fail to supply the want of a practical work, undertaking to describe, from personal observation, the several forms of the disease, and the course of treatment most effectual for their relief.

In the following pages, an attempt has been made to produce such a work. The cases on which it is based, were observed in the course of my practice at the Royal Free Hospital; and the account of the disease as here published, was originally delivered, in the form of Clinical Lectures, to the students at the Aldersgate Street Medical School.

For the reason before assigned, I have refrained from

\* *Histoire des Maladies Epidémiques.* Paris et Lyons, 1827, art. Fièvre Catarrhale, T. i. and ii.

† *Dict. des Sciences Medicales.* Paris 1817, art. Grippe, T. xix. p. 351.

‡ *Cyclopædia of Practical Medicine.*

§ *Dict. de Med.,* T. xiv., Paris 1836, art. Grippe.

|| *Dict. of Practical Medicine.*

¶ *Library of Medicine.*



entering into a detailed account of the previous epidemics, and have mainly confined myself to the practical object of describing with accuracy my personal experience of the recent visitation, as it came under my observation in the metropolis ;—illustrating and discriminating its several forms and complications, and describing the course of treatment adopted. I have, however, briefly discussed the question of the nature and causes of the disease, and pointed out the similarity of the various forms in the last epidemic, to those of previous ones, with the view of showing, that the other peculiar affections prevalent coincidently with those to which the term Influenza is ordinarily applied, have been observed in most, if not in all like epidemics, and ought to be viewed as essential forms of that disease.

The descriptions of the different forms of Influenza contained in the work, have been deduced from a careful analysis and comparison of the reports of all the cases under treatment in the Royal Free Hospital during the epidemic, while the several particulars were still fresh in the memory. If the number of these cases should at first sight appear small, it must be understood, that though comparatively few cases were received into the wards of the hospital, the total number which fell under my notice in the practice of the Institution was very large; and hence that the views expressed, relate to many of which no direct statistical account can be given. Of the more severe and peculiar cases, full notes were taken, generally every day. From the circumstances, however, in which I was placed at the period of the epidemic, with the whole medical charge of the hospital devolving upon me, and

without any assistance in recording my observations, the notes of the more ordinary cases, were almost unavoidably less complete than would have been desirable. It should also be stated, that the persons applying at the hospital being mostly in a very destitute condition, and the limited accommodation of the institution allowing of the reception of the more severe cases only, the descriptions here given must be regarded as applying to the epidemic in its more unfavourable manifestations.

I believe, however, that those who have studied the disease in an extended sphere of observation, will recognise the correctness with which the general features, and peculiar forms and complications, of the recent epidemic, are described in the work, and will not be disposed to undervalue it as a contribution to the general history of the malady. I trust also, that in any future epidemic of Influenza, my observations on the treatment pursued and found most appropriate, may supply some useful information; and should this be the case, my present labour will meet with its most satisfactory reward.

April 1, 1876. .

THE following pages contain an account of the Influenza epidemic of 1847, compiled, immediately after its occurrence, from notes of cases of different forms of disease then prevalent, taken at the time. Since, however, the work was written, our knowledge of some of these diseases has been much extended, and especially the fevers then elassed by the Registrar-General under the head of Typhus, have been shown to consist of, at least, three specific diseases—Typhus, Typhoid and Relapsing fever, the features of which are now so well understood that we can readily distinguish them. The account therefore given of the epidemic requires to be reconsidered in the light of the additional knowledge which we now possess.

The arrangement adopted in the work seems a good one, though it requires to be modified in some respects. The two first varieties of Influenza, described as simple catarrhal fever and catarrhal fever with pulmonary complication, are certainly the most characteristic forms of the epidemic; and the third variety, catarrhal fever with abdominal complication, though less frequently seen, was also an essential feature of the disease on the last occasion and in most previous visitations. The account, however, given in the work of this form of the epidemic includes a description of some cases which cannot properly be regarded as true cases of Influenza, but which are examples of ordinary fevers modified by the epidemic influence, and these should certainly be placed apart from the others.

Under the third form of the epidemic should, therefore,

be included only the cases described in the third section of that form at pages 63 to 68; while the description in section first, pages 58 to 60, and that in section second, pages 60 to 63, and the articles on Erysipelas, &c., at pages 69 to 71, should rather be regarded as referring to other diseases modified by the prevailing epidemic. In section first, pages 58 to 60, the cases described are chiefly cases of Typhoid with some of Typhus. Those referred to in section second, pages 60 to 63, are cases of Relapsing fever, and the account of the forms of eruption on the skin, at pages 71 to 74, and the description of the Morbid appearances detected in the body after death, at pages 76 to 78, also have reference to the different forms of specific fever, as have the remarks at pages 103, 104. Case 16, page 163, is a characteristic case of Typhoid fever, in which capillary bronchitis occurred as a complication.

A decided distinction should certainly be made between the cases of Influenza properly so called, and the other forms of disease prevailing at the time of the epidemic and modified by its influence, but the account would be incomplete were no notice of those affections included in it. With these qualifications the work may be regarded as containing an accurate description of the last visitation of Influenza.

T. B. P.

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#### ERRATA.

Page 12, line 15, omit the *h* at the end of the word *height*.

Page 33, 2 lines from the bottom, after *fluid*, insert *was*.

Page 33, line 22, for *catamœnia*, read *catamenia*.

Page 39, last line, for *thirteen*, read *thirty*.

Page 51, note, instead of after *death* ; and *the*, read *after death from the*.

Page 55, 5 lines from the bottom, instead of *defluent*, read *diffluent*.

Page 121, 5th line from bottom, instead of *pain, or full inspiration*, read *pain on full, &c*



INTRODUCTORY REVIEW  
OF THE  
COMMENCEMENT AND PROGRESS  
OF THE  
EPIDEMIC IN THE METROPOLIS.

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THE recent Influenza assumed the character of an epidemic disease in the Metropolis, in the month of November, 1847, or more accurately speaking, between the 16th and 22nd of that month. Its approach had, however, been preceded by the appearance of various peculiar forms of disease throughout the course of the previous year.

During the summer and early part of the autumn of 1846, dysenteric affections were unusually prevalent. With the advancing season these gave place to typhoid fever, connected with intestinal disease, and characterized by prolonged duration, great prostration of strength, depression of the vital powers, torpor of mind, and tendency to coma. This form of fever continued during the spring of 1847, at which period it was not unfrequently complicated with catarrhal symptoms. There was, at the same time, a more than usual tendency to idiopathic bronchitis, pneumonia, and other affections of the chest. Throughout the spring and early summer, intermittent fevers were common, and in March, April, and May, purpura was frequently met with, either as a primary or secondary disease. Scurvy also, owing to the deficiency of fresh vegetables from the general failure of the potato crop in the previous

autumn, was occasionally seen. In the summer, fever connected with gastro-enteric and hepatic derangements, and marked by a tendency to relapse and profuse perspirations, became the most prominent form of disease; and this again, later in the season, passed into a remittent fever of a low type. The latter, complicated with disorder of the liver and with rheumatic symptoms, became the leading febrile affection during the reign of the epidemic, and continued so, combined with pulmonary disorders, to the end of the winter of 1847-8. In the months of October, November, and December, 1847, erysipelas, which, either as a primary or secondary disease, had been throughout the year unusually prevalent, was still very commonly met with, as were also cases of diarrhœa and dysentery.

During the months of October and November, cases of chest affection, distinguished by an unusual degree of febrile disturbance, were frequent amongst the out-patients of the Royal Free Hospital. Up to the 18th of November, however, the number of applicants labouring under those symptoms, though larger than usual, did not attract much attention; but it was otherwise, on Monday the 22nd, when the fresh recommendations rose from an average of 50 or 60 to 126, and a great proportion of these proved cases of Influenza. On the subsequent Thursday, the 25th, the new patients amounted to 137, and on Monday the 29th, to not less than 166. The applications now began to decline in number, and the new patients on Thursday December 2nd, were only 111, in number, and on Monday the 6th, 95.

At the Royal General Dispensary, Aldersgate-street, the number of patients seen at the Institution, or visited at their homes, did not, in the week ending November 20th, materially exceed the average of the season. On the 22nd, however, there was a great increase of applications for relief, which

continued till the 8th of December. The largest number of persons seen on any day, as at the Free Hospital, being on the 29th of November.

Mr. Stone informs me, that the disease first shewed itself among the boys at Christ's Hospital, on Sunday the 21st November, and that for three or four days previously, catarrhal affections, with fever and headache, had been unusually numerous. On the 21st, 9 boys labouring under the ordinary symptoms of Influenza, were admitted into the Infirmary; on the 22nd, 32; and on the 23rd, 43. The disease maintained its activity during eight days, in the course of which, 112 boys were received either into the Infirmary, or into a ward set apart for their treatment, while a much larger number were more slightly affected. Cases of Influenza continued to occur till the middle of December; and in all about 350 of the boys, suffered more or less from its attacks.

By information with which Mr. Carey has favoured me, it appears that at the Infant Orphan Asylum, at Wanstead, eight miles north-east of London, the disease commenced on the 14th November, and lasted till the 26th, during which time 44 of the children, and 11 of the adults in the establishment were attacked. The greater number of cases occurred between the 18th and 24th.

It is clear, from the preceding statements, that the epidemic in the metropolis was most active from the 22nd to the 30th of November, having commenced about the 16th or 18th of that month, and ceased to be very prevalent by the 6th or 8th of December. Though, however, the disease in its intensity may thus be said to have raged more particularly during this period, it continued its ravages throughout the whole of December, 1847, and the early months of 1848. To the end of the winter quarter, indeed, various febrile and inflammatory affections, having more or less of the peculiar features which

characterized all the forms of the epidemic disease during its prevalence, were constantly presenting themselves.

The weekly tables of the deaths in the metropolis, published by the Registrar-General, and the returns for the several quarters of 1846 and 1847, and especially for those ending September 30th and December 31st, 1847, afford much interesting information in reference to the diseases prevalent prior to the appearance of the Influenza, the various forms which it assumed, and the atmospheric conditions which preceded and attended its ravages.

In the beginning of the year 1846, the weather was mild, and the rate of mortality was considerably below the average. It continued low to the commencement of summer, when there was a slight excess in the number of deaths registered, arising chiefly from diarrhœa, dysentery, and other intestinal and bilious disorders, consequent on the warmth and moisture of the season. This summer was, in fact, remarkable for great heat and heavy rains, with severe thunder-storms, and extreme and sudden changes of temperature. The weather continued warm and damp till the middle of November, when the winter set in somewhat suddenly. Both the summer and the autumn exhibited a very great increase in the mortality from the various forms of eruptive fever, diarrhœa and dysentery, especially among young children: and later in the season, from acute affections of the lungs. Typhus also was unusually fatal, more particularly in the manufacturing districts, and those large towns on the western coast which were exposed to the immigration of the destitute Irish.

The weather continued cold, from its first setting in, in November 1846, till the following May, with an interval of intense cold, between the 8th and 13th of February; and the spring of 1847 was as unhealthy as the preceding summer and autumn, and the diseases of a similar character, remained

equally fatal. There was also a greater excess in the number of deaths from purpura, hæmorrhage and other varieties of scorbutic affection. Fatal cases of ague and remittent fever were likewise more than usually numerous.

From the beginning of May to the middle of June, 1847, the previous cold was succeeded by a period of unusual warmth. July, however, commenced with a somewhat low temperature, which lasted only till the 5th, when the hot weather set in; and the daily temperature remained to the end of the month, with little exception above the average of the season. The mean temperature was  $65.4^{\circ}$ , or  $4.6^{\circ}$  above the average of the same month in the six previous years. On the 12th, the temperature stood at  $86^{\circ}$ , which was the highest point attained during the year; and the mean temperature of the week ending July 17th, was  $70.2^{\circ}$ . The averages during the first and last weeks of August were at or below, and during the remainder of the month, above the temperature of the season: the mean being  $62^{\circ}$ , or  $1.1^{\circ}$  above that of the six previous years. The month of September was cold throughout, the average  $53.1^{\circ}$ , being  $3.1^{\circ}$  below the mean of the six years preceding. The quarter was unusually dry, only 4.7 inches of rain having fallen, or one-half the usual quantity. The mortality in the metropolis during the quarter, very much exceeded that of the previous years; the excess, as in the spring, being chiefly visible in the zymotic class of diseases, and especially in the deaths from dysentery, diarrhoea and cholera, typhus and erysipelas. Small-pox, measles, and scarlet fever, were also unusually prevalent.

The temperature, during the month of October, was extraordinarily high,—the mean being not less than  $52.9^{\circ}$ ;—which was above that of the same month in any year since 1811. The prevailing winds were south-south-west and south-west, and but little rain fell during the month, except in the week



ending the 23rd. For the first two weeks of November, the temperature continued high ; the weather calm and dry, and the wind southerly and south-westerly. On Thursday the 16th, it was remarkably dark, the wind veered from south to north-west, and the temperature of the air fell from  $54\cdot3^{\circ}$  on Monday the 15th, to  $32\cdot1^{\circ}$  on Friday the 19th, or from  $11\cdot1^{\circ}$  above the average of the previous twenty-five years to the same extent below it ; making no less a difference than  $22\cdot2^{\circ}$  in only four days. On the night of Friday the 19th, the thermometer actually stood at  $26\cdot7^{\circ}$ , and the earth was frozen. The barometer remained for the whole time unusually high. On Saturday the 20th, a dense fog covered the Thames for five hours ; the temperature continued low, and the weather calm. On Sunday the 21st, however, the sky was overcast, the air charged with moisture, and the wind changed its northerly direction to that of south-by-east. By Monday the 22nd, the mean temperature had risen to  $44\cdot7^{\circ}$ , and the wind was again south-south-west, in which quarter it remained to the end of the week, November 27th. The air was damp, and rain fell on the 22nd, 23rd, 26th, and 27th. The temperature was high, having averaged  $46\cdot5^{\circ}$ , or from  $2^{\circ}$  to  $9^{\circ}$  above that of the preceding week. The barometer began to fall on the 20th, and was very low on the 27th. For the next week, ending December 4th, the average temperature was  $47\cdot9^{\circ}$  ; the prevailing winds were south-west, and a large quantity of rain fell. During part of the following week, the weather continued similar : but there was a remarkable fall in the barometer, which on the 7th stood at  $28\cdot381$ , or lower than at any period since the great storm of January 13th, 1843. On Monday the 20th, the weather again changed ; the wind shifted from south and south-east to east-north-east, and the temperature fell to  $38\cdot1^{\circ}$ , continuing low to the end of the month. For the month of November, the average temperature had been



46.9°, for December it was 42.8°; both considerably above the mean of several years. The amount of rain which fell in the quarter, was two inches less than in the same period during previous years. The whole year indeed, was unusually dry. During the months of September, October, November, and till the 20th December, the amount of electricity was very small. A brilliant aurora was visible on the 24th of October, and on seven other occasions in the course of the quarter.

In the beginning of October, the deaths registered scarcely exceeded the average; the excess which still continued in the zymotic class of diseases being compensated by a decrease in the ordinary mortality from diseases of the lungs and heart. For the three weeks, ending October 30th, the number of deaths registered was only 945: the weekly average of the quarter for the six years, from 1841 to 1847 inclusive, having been 1046. The mortality in the following week, however, somewhat exceeded the average, and continued slightly advancing till the week ending November the 27th, when it suddenly rose from 1086 to 1677 deaths. For the week ending December 4th, the deaths registered had amounted to 2454, and for that ending the 11th, they were little less, or 2416. During the following weeks of the quarter, or those ending December the 18th and 25th, 1847, and January 1st, 1848, the numbers registered were 1946, 1247 and 1599. The high mortality with which the year 1847 thus terminated, continued to characterize the early part of 1848. The deaths registered in the week, ending January 8th were 1364; and there was little variation in the numbers till towards the end of February. For the week ending 4th March, however, a rapid decline in the mortality was perceptible, the registered deaths having fallen to 1114, and for the following week to 1070; while the average for the quarter in the six previous years had been 1107.

The proportion of deaths registered as from Influenza, during each week of the six months, commencing October 1st, 1847, and terminating on the 1st April, 1848, afford a good criterion of the relative prevalence of the epidemic. The number of deaths attributed to it, from the commencement of the quarter to the week ending November 20th, are registered as in the whole 14, and for the last week only 4. In the week ending November 27th, the deaths are 36; and in those ending December 4th, 11th, 18th, and 25th, and January 1st, 1848, they are stated as 198, 374, 270, 142, and 127. On the 8th, 15th, 22nd, and 29th of January, and the 5th of February, the weekly returns are 102, 89, 56, 59, and 47. In the month of February, the decline was still more perceptible, the deaths registered in the weeks ending the 12th, 19th, and 26th, and the 4th of March, being only 27, 33, 18, and 18. March exhibited the further reduction, for the weeks ending the 11th, 18th, and 25th, and the 1st of April, of 11, 10, 6, and 8 respectively. The deaths registered, as from Influenza, amounted, for the entire six months, to 1739. The Registrar-General has however remarked, that during the six weeks the epidemic was at its height, not less than 5000 persons died, in the metropolitan districts, in excess of the average mortality of the period, an excess which shows itself in nearly every class of disease; the local maladies which had been the most predominant affections being doubtless, in many cases, assigned as the cause of death.

On analyzing the Reports, the largest amount of increased mortality is traceable to various pulmonary affections. If we include with these, the deaths registered as from Influenza (which were probably in most cases examples of the catarrhal form of the epidemic,) we shall find, that for the week ending November 20th, the total is only 297; the average for the quarter, as deduced from the deaths registered

for the previous six years, being 333 per week. By the end of the next week, November 27th, the deaths had increased to 670, and during the weeks ending the 4th, 11th, 18th, and 25th of December, and 1st January, the numbers were 1192, 1287, 927, 533, and 624 respectively. On January 8th, 15th, 22nd and 29th, and February 5th, they were, for the several weeks, 480, 500, 495, 522, and 517. For the weeks ending February 12th, 19th, 26th, and March 4th, they stood as 462, 332, 343, and 293 ; at about which numbers they were registered during March : the week ending 1st April showing 340.

Next in point of importance amongst the classes of disease in which a largely increasing ratio of mortality was manifested during the prevalence of the epidemic, are the febrile affections, included under the head typhus. Of the deaths from this cause, which, in the autumnal quarter of the previous six years, had averaged weekly 35, the number fluctuated during October, 1847, between 79 and 93. At the commencement of November, or in the week ending the 6th, there were 80 deaths registered as from typhus, and in the succeeding weeks of the month, 68, 86, and 87 respectively. For the weeks between the 4th December and 1st January, the returns show 132, 136, 131, 83, and 74 deaths from this cause ; the mortality from which continued high during the winter quarter also, 75 deaths being registered in the week ending April 1st, and in no week less than 60. For reasons which will be subsequently stated, however, the deaths registered as from typhus, should not be relied on as showing the prevalence of true typhus, characterized by the roscolous eruption on the skin ; but be viewed rather as cases of typhoid fever with intestinal and other complications, or as examples of the remittent form of fever, which, as will be seen, was frequent in the course of the epidemic, though seldom registered as the cause of death.

There was also, during the period of the Influenza, a great increase in the number of deaths from the various descriptions of eruptive fever, small-pox, measles, and scarlet fever, as likewise from hooping-cough and different forms of combined cardiac and pulmonary disease, asthma, hydrothorax, &c., with affections of the fauces and larynx. The deaths from erysipelas and rheumatism, and from different forms of cerebral disease, were considerably augmented in number, as were those from childbirth, consequent on the frequency of puerperal fever. It would appear, however, that diarrhoea and dysentery were less extensively fatal during the epidemic than previous to its breaking out, unless, as is probably the case, those affections, being generally combined with other manifestations of the reigning disease, have been registered under other designations.

The facts cited from the Registrar-General's Report, if the ordinary period of death be regarded as from the seventh to the tenth day, are confirmatory of the date previously assigned as that of the first appearance of the Influenza in its epidemic form. It will be observed that the earliest marked increase of the mortality is shown in the week ending November 27th; that it went on increasing up to December 4th; that it became somewhat less in the course of the third week, ending December 11th; and that by the termination of the fourth week, December 18th, it had fallen off considerably. The excessive mortality continued, however, throughout the remainder of December, the whole of January, and to the middle of February; nearly six thousand persons beyond the ordinary number of the period, having died in the course of the nine weeks, from November 20th 1847 to January 22nd 1848.

Supplementary to the account which has been given of the state of the weather at the accession, and during the prevalence of the epidemic, it becomes interesting to observe the atmospheric conditions in the period of its decline. The

average temperature in January, 1848, was  $4\cdot6^{\circ}$ , or  $3\cdot8^{\circ}$  below the average of the six previous years. In the early part of the month, the weather was cold, and on the 26th, 27th, and 28th very severe; the thermometer on those days being  $12\cdot8^{\circ}$ ,  $10\cdot8^{\circ}$ , and  $16^{\circ}$  respectively, below the average. On the 30th, there was a rise of temperature. The months of February and March were, however, unusually warm, the mean temperature of the former being  $43\cdot4^{\circ}$  or  $2\cdot6^{\circ}$ , and of the latter  $43\cdot8^{\circ}$  or  $2\cdot3^{\circ}$  above the average. The rain which fell in January was  $1\cdot2$  ( ~~$2\cdot2$~~ ) inches, in February  $2\cdot6$ , and in March  $3\cdot1$ ; which gives  $7\cdot9$  for the whole quarter, or 3 inches beyond the average. The prevailing winds were south-west, west-south-west, and south-south-west. The amount of electricity was about the average, and the aurora appeared five times. The mean reading of the barometer for January was  $29\cdot816$ ; for February  $29\cdot517$ ; and for March  $29\cdot505$ ; or  $\cdot057$ ,  $\cdot199$ , and  $\cdot256$  of an inch below the sesquennial average. During the months of February and March there were remarkable fluctuations of the barometer, and very low readings. Between February 9th and March 21st, the reading was below 29 inches, on portions of sixteen several days, while the average number of instances in any one year from 1800, on which it had been below 29 inches, was only seven. Commonly many years elapse between two readings of the barometer so low as  $28\cdot3$ , and yet this was the case on the 7th December, 1847, and again on the 26th February, 1848. In reference to the weather at this period, Mr. Glaiseher observes, that it was quite as remarkable as that of the preceding quarter.

From the notes of the Registrars of the sub-districts, and from other facts embraced in the Report, it appears that there was considerable variety in the period at which the epidemic commenced its attacks in different parts of the country. In



some places it was at its height previous to its outbreak in the Metropolis, in others not till long afterwards; and others again seem altogether to have escaped. We are informed by Dr. Stark that the disease was raging in Edinburgh on the 18th and 28th November. In Bradford, Yorkshire, it prevailed during the ten days commencing November 27th. In Cheshire, Lancashire and Derbyshire, it was most felt during the last two weeks of December. In Northampton, it was committing its ravages when the Registrar's notes for the quarter were written. In Bath, Bristol, Brighton, Plymouth, and Penzance, it prevailed during December.

The epidemic was raging at Constantinople in August, and it affected the south of France and the shores of the Mediterranean in October. In Paris,\* it commenced about November the 27th, and was at its height on December the 4th; in Madrid, it was very general on the 11th and 19th of January; and in Geneva,† it appeared as a casual disease in the first week in December, suddenly became very prevalent about the 20th, declined during the course of January, and had almost disappeared by the commencement of February.

It would be highly interesting to ascertain the proportion of the population of the metropolis who were attacked with the disease during the recent epidemic, for the full elucidation of this question we are not, however, in possession of the requisite information. It has been already stated, that about 350 of the 1000 boys at Christ's Hospital, or about one-third, were more or less affected with the disease. At the Infant Orphan Asylum, 44 of the children, out of the 275 resident, were attacked, about the proportion of one-sixth; and 11 adults, or about one-third of the 38 at the time in the Institution, also had the disease. In the City

\* Gazette Medicale de Paris, 1847, p. 958.

† Ibid, 1848, p. 372



Policee Foree, out of 470 adults, between 25 and 50 years of age, 100 were affected, being in the proportion of less than one-fifth.

In the Report of the Registrar-General, it is stated that, taking the deaths at two per cent.—the rate of mortality deduced from observations on the epidemic of 1837, it may be estimated that 250,000 persons were more or less affected by the disease in the metropolis; but this, the writer suggests, is probably not more than half the true number, the total proportion being probably one-fourth of the whole population. In Paris,\* between one-fourth and one-half of the population is said to have been attacked by the recent epidemic; and in Geneva,† the proportion affected, is stated to have been not less than one-third. The epidemic of 1837, we are informed, affected fully half the inhabitants of London‡ and Paris§; and in the prison at Rennes, M. Toulmouche|| states that one-third of the inmates were attacked. In Geneva, the different epidemics which have preceded that of 1847, are said to have variously affected from one-tenth to two-thirds of the inhabitants. So far, therefore, as calculations based upon observations of the disease in another locality, and during another epidemic can be depended upon, the estimate of the Registrar-General may probably not be far from correct.

In the boys at Christ's Hospital and the younger children at the Infant Orphan Asylum, as also in the adults at the latter Institution, and in the City Policee Foree, the disease was uniformly of a mild character, and in no single instance proved fatal. In fact, notwithstanding the mortality occasioned by the

\* Gazette Med. 1847, p. 958.

† Ibid, 1848, p. 372.

‡ Holland's Notes and Reflections, p. 198.

§ Gazette Med. 1837, p. 81.

|| Ibid, 1847, p. 801.

Influenza was so formidable, it was chiefly confined to persons who were previously in unsound health, or of advanced age. This not only appears from the above statement, but more conclusively from calculations contained in the Report of the Registrar-General. In the three weeks, ending November 13th, which preceded the outbreak of the disease, the number of deaths in persons under 15 years of age, was 1553; in the three weeks of the prevalence of the epidemic, it rose to 2846. In the same two periods, the deaths of persons from 15 to 60 were 966 and 1970, and at the age of 60 and upwards, 576 and 1999. The mortality in childhood was, therefore, raised 83 per cent., in manhood 104 per cent., and in old age 247 per cent.

The difference in the mortality as between males and females was but slight; for though during the prevalence of the epidemic, the deaths of females exceeded those of males in number, yet as the affection was much more fatal to aged than to young persons, and the proportion of elderly females living, always considerably exceeds that of males, it was to be expected that the deaths of females would, during the epidemic, be more numerous than those of the opposite sex, or the reverse of the ordinary rule. M. Marc d'Espine,\* in a memoir on the epidemic, as observed at Geneva, has shown that the mortality in elderly persons, underwent the same remarkable increase in that city as in London. He has also endeavoured to prove that females were more liable to the disease than males.

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Before proceeding to treat in detail of the several phenomena presented by the recent epidemic, it seems desirable to glance

\* Gazette Med., 1848.

at the various names by which the disease is known in different countries, and the general views taken by systematic writers of its proper classification.

By SYDENHAM, the disease has been described under the name of *Tussis epidemica*; by HUXHAM, under that of *Febris catarrhalis epidemica*; and by others, as *Synochus catarrhalis*. By SAUVAGES, one of its forms has been classed with the remittent fevers, under the name of *Amphimerina anginosa*, and others under those of *Rheuma catarrhale*, and *Catarrhus epidemicus*. M'BRIDE has designated the disease, *Febris catarrhalis remittens*; and CULLEN, adopting a view little likely at the present day to find followers, has termed it *Catarrhus a contagio*. GOOD has adopted one of the names of SAUVAGES and SWEDIAUR—*Catarrhus epidemicus*; and YOUNG applies to this disease the term of *Defluxio catarrhalis*, reserving for the common forms of cold, the name of *Cauma catarrhale*. By some writers the term *Cephalæa catarrhosa* has also been employed.

In France, where, it is remarked, "the most serious things have always received jocose names,"\* the epidemic of 1411, one of the first which appears to have been distinctly described as experienced in that country, was termed the "*Mal du Tac*;"† that of 1414 was called, "*Coqueluche*," a name since applied only to the whooping cough; and in a third visitation in 1427, the disease was called *Ladendo*.‡ Since this time each epidemic has had its peculiar appellation, such as *Follette*, *Petite poste*, *Petit courier*, *Coquette*, *Brienne*, *Grippe*, &c., originating in some caprice of the time, but of these, all, except the last, became obsolete with the epidemics

\* Hecker's Epidemics of the Middle Ages,—Sydenham Society, p. 219, and Ozanam, Petit and others.

† According to Mezeray, quoted by Ozanam.

‡ This is written *La Dando* in Ozanam.

to which they were applied. The term *Grippe*, however, has been more or less extensively adopted in other countries since its first introduction in France in 1743.

The name *Influenza*, by which the disease is commonly known in this country, was first introduced in 1741, in Venice and Milan,\* and we are informed by Huxham,† became general in this country, and in some parts of the continent, in 1743.

In Russia the disease is said to be known as "*Le Catarrh Chinois*," a term sufficiently expressive of the popular idea of the origin of the epidemic. In other parts of Europe, the well-known progress of the epidemic in a north-westerly direction, through Russia, has given names to the disease, such as *die Russische Krankheit*, or *Russische katarrh* in Germany; *Catarro Russo*, or *Morbo Russo* in Italy; and *Influenza Rusa* in Spain. In German scientific works, the disease is variously termed *Epidemischer Schnupfenfieber*, *Grippe*, or *Influenza*.

The term *Epidemic catarrh*, which has most generally been employed by scientific writers in this country, is objectionable as associating the disease too closely with the ordinary forms of catarrhal affection to which it bears but a slight analogy, while it separates it from the class of fevers with which it is more intimately allied. The term is also the more inapplicable from embracing only one class of the phenomena by which

\* Petrequin in *Gazette Medicale*, 1837.

† *De aëre et Morbis Epidemicis*, 1752. We are informed by the editor of the *Dublin Quarterly Journal of Medical Science*, (February, 1848, p. 257) that "the disease is described as prevailing in Ireland, in a medical manuscript of the 15th century, under the name of *Fuacht*, as well as *Slaodan*, and is mentioned in the annals of the four masters, as epidemic in Ireland, in the 14th century. A disease, the symptoms of which answer to those of *Influenza*, is also alluded to in our early Gaelic manuscripts, under the name of *Creatan*." It is stated also by the Registrar-General, that the disease is called *Pose*, by the old English writers.

the disease is characterized, while it entirely excludes all reference to the disorder of the gastro-intestinal mucous membrane, which, I shall endeavour to show, is in all cases present to a greater or less extent, and obtains to a severe degree in some.

In France, Germany and Switzerland, medical authors, alive to these objections, have very generally employed the popular appellation of *Grippe*, and this, since the middle of the last century, has been sanctioned by its introduction into the nosology of Sauvages. In this country, for the same reason, the term *Influenza*, has, of late years more especially, been generally applied to the disease in scientific works; and very recently, has been adopted by Mr. Farr, in the statistical nosology employed by the Registrar-General, under the class of zymotic or epidemic diseases.

In the following work, I have followed the Registrar-General in adopting this term, and also that of *Epidemic Catarrhal Fever*, employed by Huxham and others, and it is my intention to treat of the several varieties of the disease, under the heads of

1st. *Simple Catarrhal Fever.*

2ndly. *Catarrhal Fever, with pulmonary complication.*

And,

3rdly. *Catarrhal Fever, with predominant disorder of the abdominal organs.*

Of these, the first and second comprise those to which the term *Influenza* is commonly applied. The third class, I shall further subdivide into, 1st, cases of Simple Enteric Fever; 2nd, Fever with bilious disorder, and characterized by a tendency to relapse, or assume a remittent form; and, 3rdly, Gastro-enteritic and Bilious Fever, complicated with rheumatism.

It has been before stated, that during the recent epidemic,

the deaths from the various causes classed under the head of diseases of the brain and spinal cord, were much more numerous than usual, and several instances of cerebral disease fell under my notice at the time. These were, however, either observed in persons who had previously laboured under disease of the brain, or occurred as complications of one or other of the forms of affection enumerated, and do not, therefore, require to be noticed under a separate head.



## SIMPLE CATARRHAL FEVER.

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In this form of the complaint, the attack was most usually sudden, the patient experiencing a sense of cold down the back and between the shoulders, lapsing into general chilliness or complete rigors, and succeeded by flushes of heat and dryness of the skin, pain in the head, chest, and extremities, and prostration of strength. Generally these symptoms followed some exposure to damp and cold, but occasionally they appeared without being traceable to any immediately exciting cause, and more rarely, the attack came on gradually, with a general feeling of indisposition of two or three days' duration.

At first, there was dryness of the nostrils, and soreness of the throat, with a sense of tightness or constriction of the chest, and a dry hard cough. As the disease advanced, copious defluxion from the nostrils took place; the throat was generally more decidedly affected, and the cough more frequent. The expectoration was at first scanty, and consisted chiefly of a pale glairy fluid; but at a later period, there was a more copious discharge of the usual opaque mucus. At the same time, some degree of difficulty of breathing and soreness at the chest were experienced, and occasionally slight lividity of the face was perceived. The respiration was, in most instances, accelerated, and, on auscultation, the respiratory sounds were usually dry and harsh, especially in the posterior and inferior regions of the chest, and sibilant and sonorous rhonchi were audible on forced inspiration. In some instances, no morbid sounds were detected, and the vesicular murmur was extremely indistinct.

Throughout the course of the disease there was distressing headache, particularly in the forehead, across one or both eyebrows, and in the balls of the eyes, increasing ordinarily in severity towards evening, and often undergoing considerable intermission during the day. With these symptoms there was commonly much mental depression, listlessness, inability for intellectual exertion, and nocturnal restlessness. In some cases, epistaxis occurred and produced alleviation of the symptoms. The tongue was usually moist, and covered with a whitish creamy fur, but, occasionally, it was morbidly red at the tip and edges, and thickly coated towards the centre and root, with a fur of the colour, popularly termed whity-brown ;—more rarely, it was dry. In the greater number of cases, entire loss of appetite, with some little nausea and a confined state of the bowels, was experienced at the commencement ; but, occasionally, diarrhœa was observed at an early period, and not unfrequently, it came on during the progress of the disease. A sense of weight, tenderness, or pain, in the right hypochondrium were frequent symptoms, and were generally combined with some degree of icteroid tinging of the conjunctivæ, or of the general complexion.

Prostration of strength was throughout one of the most marked and distressing features of the complaint, accompanied as it was with a general feeling of soreness and lassitude, and with dull aching pains in the chest, back and limbs. The pulse was but little increased in frequency, generally ranging from eighty to ninety, and rarely exceeding a hundred beats in the minute. Though occasionally full, it was uniformly very compressible, and, after the first day or two, feeble. The skin was seldom very hot or dry, or, if so at the commencement of the disease, it soon became cool and moist, and generally the complaint subsided with free perspiration. A sense of chilliness, alternating with transient flushes of heat, was a very con-

stant symptom in every stage of the disease. At first, the urine was usually somewhat scanty and high coloured, but after a day or two, it flowed more copiously, and deposited, more or less, sediment.

The cases of simple catarrhal fever were usually too slight, to require much medical aid, so that though the number of persons prescribed for, at the Royal Free Hospital, from the 22nd November to the 6th December inclusive, could not have been less than several hundreds, only twenty persons thus affected were admitted into the wards, during the three or four months in which the disease was prevalent, and these were all cases, either of unusual severity, or of persons utterly destitute. The patients were under treatment in the hospital, on an average, nine days, two were detained for four days only, three for five, and three for six days ; but in one case, the period of residence was extended to seventeen, and in another, to twenty days, the remainder being resident between seven and fourteen days. Owing to the difficulty of collecting correct histories of the illness of hospital-patients before they come under personal observation, it is difficult to give a satisfactory estimate of the probable total duration of the disease in these cases. Of thirteen, however, in which the length of illness, previous to admission, seems to have been ascertained with exactitude, it averaged six days, so that the total duration of the cases may be stated at fifteen days. In three instances, the patients were only ill seven days, and in the three others, the illness extended to twenty-one, twenty-two, and twenty-five days. In the Police Force the average period of invaliding from service was three days, and in eleven only, out of one hundred cases of the epidemic, which occurred in about two months, did the period of illness exceed a week. The ordinary duration of indisposition in this form of Influenza, may therefore, be stated at from three to five days in the milder cases,

and at from seven to ten, in those of a more severe description. The disease, however, on its subsidence, usually left the patient for some time much reduced, and suffering from general debility, inaptitude for exertion, either of body or mind, with loss of appetite, or entire distaste for food, and a troublesome cough; and in this state there was a great tendency to relapse.

Not unfrequently, towards the termination of the complaint, the transient pains, which had been troublesome during its course, increased in severity, and rheumatic affections of an obstinate and painful character supervened. These often assumed a distinctly intermittent type, returning regularly at the same hour for several days in succession, and not unfrequently affecting one side of the head, or one eye-brow, or eye-ball, and occasionally the intercostal muscles of one side of the chest.

Among the children at Christ's Hospital, the disease was much milder than in the cases just described, and probably assumed the form which characterised it in most instances. The attack usually commenced with a sense of cold, sometimes amounting to actual shivering, followed by heat of skin, and the ordinary symptoms of fever. In several cases, the disease was ushered in by nausea and vomiting, and in one or two by diarrhoea and gastrodynia. At an early period, there was usually a hoarse, barking cough, with intense frontal headache, much prostration of strength, a hot dry skin, and quick pulse. About the third day, the disease began to subside, and generally passed off with perspiration. The most frequent complications were affections of the throat and larynx. The laryngeal affection usually assumed the form of a croupy cough, and in three cases was developed into decided croup. In two cases, slight erysipelatous eruptions appeared on the face. The boys were not ordinarily detained in the Infirmary more than four or five days; but the three affected with croup were under

treatment eleven, fourteen, and eighteen days. All the cases terminated favourably; but in several instances, the attacks were succeeded by considerable debility and a troublesome cough. The cases at the Infant Orphan Asylum, and in the Police Force, were likewise of a mild character.

## CATARRHAL FEVER WITH PULMONARY COMPLICATION.

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The cases of this form of the epidemic, under treatment at the hospital, were in all twenty-eight in number, and of these, the local disease took the form of—

Acute or Subacute Capillary Bronchitis, in eleven cases.

Bronchitis supervening on Tuberculous disease of the Lungs, in four cases.

Bronchitis complicated by disease of the Heart or Aorta, in six cases, and

Pneumonia, in seven cases.

### 1. ACUTE CAPILLARY BRONCHITIS AS A COMPLICATION OF INFLUENZA.

Of this affection, not less than thirteen cases occurred during the fortnight of greatest prevalence of the Influenza. Eight of these were examples of the idiopathic form of the disease ; in three cases, it supervened on tuberculous disease of the lungs ; and in two others, it occurred as a complication of typhoid fever connected with intestinal disease.

In my description of this form of disease, I shall confine myself to the eleven former cases, omitting the last as more closely allied to the cases of Influenza with gastro-enteric complication.

The mode of invasion in cases of Influenza, complicated with acute capillary bronchitis, was very similar to that in the



other more severe forms of the epidemic. In eight cases, the disease commenced suddenly, for the most part with a feeling of cold between the shoulders and down the back, increasing to slight shivering or severe rigors, and followed by heat of skin, more or less intense, and in some by perspiration. To these symptoms succeeded pain in the head, chest, and loins, a sense of tightness across the chest, difficulty of breathing, and cough, with usually some soreness of the throat. In one case, that of a patient in the hospital, under treatment for hemiplegia dependent on softening of the brain, the disease was ushered in after a catarrhal affection of a fortnight's duration, by rigors and a well-marked epileptic paroxysm. In another, severe pain in the chest and urgent dyspnoea were the earliest symptoms; and in two more, the disease commenced with sickness and vomiting, combined in one of them with pain in the abdomen.

Of the patients in whom the severe symptoms appeared suddenly, four had laboured under some degree of affection of the chest, for periods varying from two weeks to several months; and in three others, in which the disease advanced gradually, it had been preceded by a variable amount of general indisposition, so that of the eleven cases, four only were of persons previously in a sound state of health.

The period of the occurrence of the severe symptoms preceded the admission of the patients into the hospital, in one instance, five days, in two, six days, and in one, seven days. In three cases, the disease attacked patients under medical treatment in the wards, and in one, where it supervened on a chronic affection of the lungs, the precise period of its commencement was not ascertained.

In two of the patients who were seized with the disease while in the hospital, no exciting cause could be detected, the third, a nurse in the Institution, ascribed her attack to having

taken cold when up at night ; while in the others admitted with the disease, careful inquiry failed to elicit satisfactory information of any exciting cause having been in operation.

The *symptoms in the early stage*, of the cases complicated with capillary bronchitis, differed in no material point from those characterizing the more severe forms of Influenza. There was usually increased frequency, and some difficulty of breathing, and constriction of the chest, with soreness or stiffness of the throat. The cough though slight, was troublesome from its frequency. The expectoration, if any, was scanty and of a glairy character. The tongue was usually red at the tip and edges, and covered with a creamy mucus, or with a whitish-brown fur ; occasionally, it was morbidly red throughout. The pulse was accelerated, beating generally from 100 to 112 or 116 in the minute ; but in one case, it rose to 132 on the third day of the disease. The skin was not usually hot, or if so at first, the heat declined after two or three days.

With these symptoms, there were the marked prostration of strength, the severe frontal headache, the pain in the back and limbs, and the general soreness of the body, which characterised the ordinary cases of Influenza. Herpetic eruptions appeared in three cases around the mouth ; in two, on the second day from seizure, and in the other, on the fifth day. In three other cases, in which emetics had been given at the commencement of the attack, obstinate vomiting continued for two or three days.

When the chest was examined in this stage of the disease, the only morbid phenomena detected, were a rough character of the inspiratory sound, particularly when a forcible inspiration was drawn, with some slight crepitation, audible more especially towards the lower part of each dorsal region, and general feebleness of the vesicular murmur, with sibilant rhonchus occasionally heard in other parts of the chest. The respiration was, however, quicker and shorter than natural, averaging

28, 32 or 40 respirations in the minute; the dyspnœa was greater than could be explained by any apparent physical signs, and most generally there was some lividity of the face.

*In the second stage*, all these symptoms were much aggravated. There was great difficulty of breathing, and the respiratory acts were performed quickly and imperfectly, the respirations in the minute, varying from 30 to 40 or 50. The cheeks were much flushed, and the lips were of a purple colour. Generally there was no acute pain in the chest, but rather a sense of constriction and soreness; and the cough, though frequent, and often occurring in paroxysms, was not usually severe. The expectoration still continued scanty, and consisted of small, yellowish-white pellets, forming tenacious masses of a peculiarly nodulated or botryoidal form, very nearly resembling, when floating in water, some of the larger oolitic limestones. The tongue, mostly covered with a thick whitish-brown fur, was somewhat dry and often red at the tip and edges, or morbidly red and glazed. The pulse was much accelerated, beating 120 to 130 or 140 times in the minute; but was generally small and very compressible. In some instances, after being low and feeble at the outset of the disease, it acquired a more sthenic character at the commencement of the second stage. The skin was rarely very dry, or much above the natural temperature, and the hands and feet were generally cool. The former were much congested, so that when the skin was blanched by pressure, the colour did not readily return. There was, in most cases, an increase of the general prostration in this stage, much headache and often transient delirium, especially during the night.

On percussion, the chest did not present any alteration in the degree of resonance proper to its several regions, unless when there existed other disease of the lungs or heart. On auscultation, crepitation of a more or less fine character was

audible with the inspiration, first, in the inferior part of one or both dorsal regions, and thence spreading rapidly higher up in the back, and towards the bases of the lungs, laterally and anteriorly, while occasional sibilant rhonchus was heard in other parts of the chest, especially on forced inspiration. During this stage, the patients usually laid on the back, with the head more or less elevated, and slightly inclined to one side ; occasionally the difficulty of breathing prevented their lying down with ease.

*The third stage* of the disease was marked by the dyspnœa becoming so severe, that the patients were compelled to sit constantly upright in bed, or to lean forwards, resting on their arms and elbows. At intervals, the respiration became even still more laborious. The lividity of the cheeks, lips and hands increased, the eyes became prominent, and the expression of countenance extremely anxious. The cough was frequent, and of a short abortive character, giving the impression of the presence of viscid secretion in the lungs, which the patient had not the power to expectorate. Its frequency also occasioned much fatigue, and it often caused pain in the head and great general distress, and during the paroxysms, the lividity of the face was much increased. The sputum was generally expectorated in large quantity. It was of a greenish yellow colour, of a very viscid consistence, contained little air, and was occasionally streaked with blood. The respirations amounted to 50, 60, and in one case to 72 in a minute, and the expiration was difficult and prolonged. The pulse, uniformly very feeble, was either extremely quick, 140 to 150 or 160 in a minute, or intermittent, so as to number only 100 or 120 beats. The tongue was covered with a thick yellowish, white, or brown fur, and was generally dry ; sordes also formed on the teeth. The general surface of the body now became cool and bathed in perspiration, and the

hands and feet were decidedly cold. The transient delirium before noticed, grew more constant, and in one case, there was active mania at the earlier period, lapsing, with the progress of the disease, into low muttering delirium, with deafness and tendency to coma. With the decreasing strength, the cough became slight, the expectoration nearly or entirely ceased, and the patients died, either gradually from increasing exhaustion, or suddenly from suffocation.

With the progress of the disease, the physical signs underwent a corresponding change. The chest, which had been naturally resonant on percussion, now yielded a morbidly clear sound, almost tympanitic, except when portions of the lungs were the seat of old or recent condensation. The crepitation gradually extended over larger portions of the lung, being of a finer character in the parts more recently involved, and giving place to sub-crepitant and mucous rhonchi, in the situations in which it was first heard, and, finally, becoming of a gurgling character in the neighbourhood of the larger bronchial tubes. The sub-crepitant rhonchus towards the later stages of the disease, when the respiration was very laborious, became audible with the expiratory, as well as with the inspiratory, act. When there was any local condensation, more or less decided bronchial respiration was also heard in the parts so affected.

Such was the course of the disease in the cases which proved fatal; in those which terminated more favourably, the improvement took place in three instances, after the disease had reached the stage of secretion, as evidenced by the presence of fine crepitation in the dorsal regions, and in three others, after effusion had taken place, so extensively, that crepitant and sub-crepitant rhonchi were audible in all parts of the lungs.

The amendment was marked by the respiration becoming



less hurried and laborious, by the expression of countenance appearing less anxious, and the face less livid, and by the diminution of the general prostration. The pulse beat slower and stronger, and the paroxysms of coughing were less severe. The sputum lost its viscid character, and became more mucopurulent, having a greater tendency to coalesce into a homogenous mass, involving the presence of more air, in the form of large bubbles. At a still later period, the mucopurulent secretion was combined with serous and spumous fluid, occasionally slightly streaked with blood. Subsequently, it consisted chiefly of this fluid, and finally declined in quantity.

The improvement in the general symptoms was attended by an alteration also in the character of the physical signs. The mucous and sub-crepitant rónchi gave place to crepitation of a finer character, and the space over which the morbid sounds had been audible gradually contracted. The latter disappeared, first, in the upper parts of the chest, then, in the lower portions of the front and sides, and, lastly, at the lower dorsal regions, until they were at length merely audible even there on forced inspiration. A considerable period, however, elapsed in all cases after amendment was visible, before convalescence could be regarded as fully established, during which, the patients continued to suffer from cough and dyspnœa, and were subject to sudden returns of the difficulty of breathing and pain in the chest. The mucocrepitating sounds could still be detected, on examination, long after the general symptoms had in a great degree disappeared ; and at a later period, after decided crepitation had ceased to be audible, the inspiration continued to possess a somewhat harsh or rough character, especially at the bases of the lungs, and the expiratory sound was more distinct and prolonged than natural. The unusual clearness of the resonance on percussion, especially in the dorsal regions, was also observed for some time after the more



marked physical signs had disappeared, and then gave place, in some cases, to a slight degree of general dulness.

After the subsidence of the general symptoms, rheumatic affections not unfrequently appeared, most commonly in the form of pains in the head and face, or in the intercostal muscles; and in some cases materially prolonged the convalescence.

The peculiar feature presented by *examination after death* from this form of disease, was the extremely inflated and emphysematous condition of the lungs, which, in lieu of collapsing when the chest was laid open, in some cases even protruded from the cavity. Section through the whole substance of the lungs produced, in some instances, little change in their general volume. This condition was not limited to certain portions of the lungs in which there were larger or smaller dilated cells, as in ordinary cases of emphysema, but was evidently due to a general, and tolerably equal, inflation of the entire pulmonary tissue. The mucous membrane of the bronchial tubes was reddened, and the injection increased from the larger towards the smaller tubes; the membrane in the latter being intensely red or ecchymosed, deprived of its natural glistening surface, having a villous appearance, and being thicker and softer than usual. In the cases which proved fatal at an early period, the parenchyma of the lungs had, for the most part, a peculiarly dry appearance, but in the later stages there was much congestion, more especially in the posterior and inferior portions of the lungs, and when divided and compressed, a considerable flow of spumous fluid exuded from their tissue.

Pneumonic condensation, either of the lobar or lobular form, existed, to a greater or less extent, in every instance. In two cases, where there was lobar condensation of a considerable portion of the lungs, the consolidation seemed ascribable to the

effusion of serum and pus rather than to that of lymph. In those cases where the condensation was of the lobular form, the solidified masses varied from patches, involving two, three, or more lobules, to others of much greater extent, and were in all cases distinctly bounded by the interlobular septa. The condensed portions on the exterior of the lungs were depressed below the level of the adjacent inflated portions of the pulmonary tissue ; and were either very solid and of a deep purple colour when in the second stage of inflammation, or softer, and of a yellowish red hue, when the stage of purulent infiltration had commenced. In one case, in which there were also tubercles and cavities in the lungs, some of the lobules were very densely solidified, while others were of a softer consistence, and the softening of the tissues had formed in places distinct cavities. On section of the lungs, a drop of very viscid whitish coloured secretion exuded from the cut extremities of the smaller bronchial tubes. The distension of the smaller tubes, with this peculiar secretion, occasioned an increase of their size, and this dilatation, together with the reddening of the mucous membrane, though existing in all parts of the lungs, were more marked in the inferior portions, and especially in the masses, whatever their size, of condensed lung. The presence of this secretion in the tubes, preventing the escape of the air contained in the cells, was, doubtless, the cause of the general inflation of the lungs. The secretion, in the cases which proved fatal at an early period, was much more viscid than in those which survived to a later stage, but the dilatation was more decided in the latter. In most of the cases, the secretion in the larger bronchial tubes was of a deep sanguineous colour ; but as the matter expectorated during life was entirely free from, or but slightly streaked with blood, the appearance of the secretion must have been due to transudation after death. The bronchial glands were, in every case, more or less enlarged

and softened, and in a few, the seat of purulent infiltration. The right cavities of the heart were distended with firm coagula, more or less completely decolourized, which in two instances, passed into the smaller branches of the pulmonary artery.

Two cases were complicated with tuberculous deposition and excavations in the lungs. In one of them, both lungs were tuberculous, but especially the left, in which were several cavities: there was also a cavity towards the apex of the right lung, and the left side had undergone contraction after an old pleurisy. In the other case, though there were masses of lobular condensation, gradually assuming the ordinary appearance of tubercle, only two or three small cavities were discovered, and these were confined to the left lung. There had, in this case, been an extensive recent pleurisy; sero-purulent effusion existed on the right side, and the pleural surfaces were covered with lymph. The kidneys of one of these subjects were also decidedly diseased, and in the other, they were of a coarse texture, with the fibrous tunic slightly adherent.

In every instance, the parenchymatous organs in the abdomen were congested, and the spleen was larger and softer than natural. The alimentary canal was more or less affected, in three cases, in one of which there was slight tuberculous disease of the solitary follicles in the ileum and colon, and of the aggregate glands of the ileum. The two others displayed different degrees of that enlargement and ulceration of the aggregate glands which is characteristic of typhoid fever. In three instances, the mesenteric glands were also enlarged, and in one softened. In one of the cases in which cerebral symptoms had been predominant during life, the brain exhibited subarachnoid effusion, and a small quantity of fluid found in the ventricles. In two cases, to be subsequently

detailed, there was recent pericarditis combined, in one of them, with endocarditis.

The *diagnosis* of Capillary Bronchitis, as a complication of Catarrhal Fever, must necessarily, in the early stage, be very uncertain. In cases of Influenza, when an unusual degree of dyspnœa, lividity of the face, and prostration of strength occur, we may, with considerable probability, conjecture the affection which is about to ensue, while the physical signs remain of an undecided character. It is only, however, at a later period, when effusion to a greater or less extent has already taken place, that the general symptoms and physical signs become sufficiently characteristic to remove all doubt as to the nature of the disease. The only affections with which capillary bronchitis can then be confounded, are the more ordinary forms of bronchitis on the one hand, and pneumonia on the other; and it should be borne in mind, that the disease is generally combined with some degree of both these affections, and that its character is variously modified by their presence. The following remarks, therefore, only apply to its more characteristic forms.

From Pneumonia, Capillary Bronchitis may be distinguished,

1st. By the general symptoms: the less sthenic character of the febrile disturbance which accompanies all stages of the disease, the greater degree of lividity of the face and extremities, the more rapid prostration of strength, and the earlier appearance of symptoms of asphyxia.

2ndly. By the physical signs. The absence of dulness on percussion in the earlier stages, and the occurrence of abnormal clearness at the later periods,—the fine crepitation generally first audible in the inferior parts of one or both dorsal regions, and then rapidly spreading over all parts of the chest; and the tendency of this sign to pass into the subcrepitant and mucous rhonchus, rather than to give place to evidences of

condensation, such as bronchial respiration, and increased resonance of the voice and cough.

3rdly. By the peculiar characters of the dyspnoea, cough and expectoration. The respiratory movements, are rapid, short, and hurried, rather than laborious, and irregular; and there is sense of constriction in the chest, without pain. The cough comes on generally in paroxysms, and is fatiguing, from its frequency, rather than painful or very severe. The sputum consists of small whitish coloured, and viscid pellets, free from air, which have a tendency to become aggregated into tenacious, solid, irregularly-shaped masses, and want the russet colour, glairy adhesive quality, and small air-bubbles, which characterise the expectoration in pneumonia.

From general or ordinary bronchitis, the points of discrimination are less decided; it will, however, generally be found, that in capillary bronchitis,

1st. The degree of dyspnoea and lividity of the face are greater, and the prostration of strength, not only appears earlier, but is throughout more marked.

2nd. The different forms of crepitant and sibilant rhonchi, are at all times the prevailing physical signs.

3rd. The cough is less severe, and the sputum in the earlier stages, resembles rather aggregations of viscid whitish pellets, than the glairy or mucopurulent masses of ordinary bronchitis.

Attention to these particulars, will sufficiently distinguish capillary bronchitis, as a complication of Influenza.

The general symptoms in the cases which fell under my observation, presented considerable variety. Dyspnoea was commonly one of the earliest, and throughout the progress of the disease, one of the most striking symptoms. In the early stage, the patients generally laid on the back, inclining towards one side, and with the head somewhat raised; but with the progress of the disease, the difficulty of breathing increased,



and they were compelled to sit upright in bed, or to recline forwards, resting on the arms. Two instances, however, occurred, in which urgent dyspnœa came on so early in the complaint, that the patients preferred to be propped up in bed, though not altogether incapable of reclining ; and as no evidence of effusion to any material extent could be detected, the dyspnœa must have been due to spasmodic contraction of the smaller bronchial tubes. In two other cases, in which the pulmonary affection was the predominant disease ; and in a third, where it occurred as a complication of typhoid fever, the patients continued capable of lying in the recumbent position, throughout the whole course of the complaint, a peculiarity ascribable probably to the great depression of strength, which in all the cases, was present from the first.

Lividity of the face and extremities, though very common symptoms, varied considerably in degree in different cases. In the earlier stages, the face was generally flushed, and at the later periods, the cheeks, lips and hands became extremely livid, particularly during the paroxysms of coughing. In one case, however, which terminated fatally, the lividity was at all times slight ; in a second, it was observable in the earlier period only, being succeeded in the later by pallor of the face and lips ; and in a third, which recovered, it was at no time very perceptible.

The pulse was uniformly small and very compressible and little accelerated in the early stages, in the later, however, it became extremely feeble, and either very rapid, or irregular and intermittent. In the comparatively few instances in which it was at first firm and full, it soon lost that character. The skin, if ever hot and dry, was only so in the early stages, being usually rather cool and moist, and in the more advanced period, decidedly cold and bathed with clammy perspirations ; in one or two cases, however, it was peculiarly dry and harsh.



Acute pain in the chest was a very rare symptom, the great majority of the patients complaining only of difficulty of breathing, and a sense of constriction in the chest, and perhaps some soreness with the cough.

The evidences of gastro-enteric disorder were far from being so decided in the cases of Influenza complicated with capillary bronchitis, as in those where the pulmonary disease took the form of pneumonia. In two instances, the disease was ushered in by sickness and vomiting, with, in one, pain in the abdomen ; and in all cases, nausea and loss of appetite were constant symptoms which often continued, even after convalescence was considerably advanced. Jaundice appeared but in one case, and then only at the commencement of the attack, and in no very intense degree ; but some slight tinging of the conjunctivæ was a common characteristic. In three cases, there was urgent vomiting followed by diarrhœa, but in these, emetics had been given at an early period. There was occasionally some tenderness in the abdomen, and especially in the right hypochondrium. The tongue was almost invariably thickly coated with a whity-brown coloured fur ; and was frequently red at the tip and edges, the papillæ being red and enlarged. In the early stages, it was often moist and swollen, but afterwards rather dry and clammy, though never like the hard, dry, brown tongue of typhus and pneumonia. In one case, the organ was morbidly red and glazed, throughout the attack. Herpetic eruptions appeared on the lips of three patients in the earlier periods of the disease.

The cases classed as examples of subacute capillary bronchitis, differed from those of the acute form merely in the diminished urgency of the symptoms and prolonged duration of the attack. All of them had commenced, at the time Influenza was prevalent, with symptoms of a more acute character, which had either been entirely neglected or imperfectly treated.

*Prognosis.*—The cases of acute capillary bronchitis which occurred during the prevalence of the Influenza, were extremely unfavourable in their result, five out of the eleven having proved fatal. Two patients out of the five, however, had been ill previous to the attack, and presented on dissection such advanced organic disease of the lungs, as would have terminated existence, had not life been more rapidly destroyed by the bronchial inflammation. They may, therefore, be fairly excluded from any estimate of the mortality; which will then be reduced to three fatal cases. One of the latter was that of an emaciated female, thirty-six years of age, who had for a long period suffered from chronic cough and dyspnœa, and whose lungs disclosed traces of old emphysema, and considerable recent pneumonic condensation. The patient in the second case was originally seized with symptoms of gastro-enteric and hepatic disorder, as vomiting, jaundice, and much prostration of strength; to which those of bronchitis succeeded. The subject was a female fifty years of age, a nurse in the hospital, and formerly of intemperate habits. The third fatal case, was that of a girl twenty years of age, who had suffered for several weeks previous to seizure, from cough, general debility, and suppressed catamœnia. There was no post mortem examination of the two latter cases; but in the last, effusion into the pericardium was suspected.

The following table gives the ages of the patients affected with capillary bronchitis, and the fatality at the several periods of life:—

Between 18 and 20 years of age,	6,	died	2.
„ 20 and 30	„	1,	„ 1.
„ 30 and 40	„	3,	„ 1.
„ 50	„	1,	„ 1.

Of the above cases only two were males, their ages being twenty and thirty-six respectively.

The period of death in the cases which proved fatal, and in which no serious organic disease of the lungs was known to exist, were—

The 4th day from admission and the 9th from seizure,

7th           ,,           ,,           10th       ,,

7th           ,,           ,,           12th       ,,

not calculating the previous duration of slight indisposition. In the two cases, where advanced tuberculous disease of the lungs existed, death occurred on the tenth day from admission, and on the fourteenth and sixteenth days from the commencement of the bronchial inflammation.

In the cases which recovered, two of the patients were under observation, from the commencement to the close of their illness, and the total duration of the disease was twenty-two and twenty-six days ; the convalescence being established on the eighteenth and twenty-first days from the commencement of indisposition. The patients, in three other cases, admitted on the fourth, sixth and seventh days from seizure, were convalescent on the twenty-eighth, seventh, and fourteenth days respectively, after reception. In the first of these, however, the patient was detained in the Hospital forty-four days, or till the forty-eighth day of the disease, and was even at that time still feeble, and not altogether free from cough. In the last of the three, also, the removal of the thoracic symptoms was followed by rheumatic pains in different parts, especially in the intercostal muscles, which occasioned her detention in the hospital for some time after recovery from the thoracic affection. From these data, the ordinary duration of the cases of Influenza, complicated with capillary bronchitis, may be stated at from fourteen to twenty-one days, and the extreme duration at from thirteen to thirty-two days.

The cases of bronchitis, complicated with organic affections of the heart, do not offer peculiarities of sufficient interest to

demand specific notice, and those in which recent inflammatory affections of the peri and endo-cardium occurred during the epidemic, in conjunction with the ordinary pulmonary or typhoid symptoms, will be hereafter described.

## 2. EPIDEMIC CATARRHAL FEVER COMPLICATED WITH PNEUMONIA.

The cases in which the predominant local complication of Influenza assumed the form of pneumonia, were seven, or excluding one for reasons afterwards specified, only six in number.

The disease, in these cases, assumed a very different character from that which pneumonia ordinarily presents, being attended by an unusual degree of depression of strength, and combined with various indications of disorder of the chylopoietic viscera, and more or less general bronchial inflammation.

Five out of the six cases of pneumonia treated in the hospital, commenced with symptoms common to the more severe forms of Influenza, chilliness or actual rigors, followed by heat of skin, pain in the head, and, in three patients with pain also in the chest, and difficulty of breathing. In four cases, the period of attack preceded that of admission, by from two to four days ; in another, the patient had been ill thirteen days before application ; and the sixth, had an attack of the more ordinary form of Influenza, six weeks previous to his reception, from which he recovered sufficiently to resume his employment as a dock-labourer, when the symptoms of inflammation of the chest re-appeared, and he was admitted after an interval of four days.

In all of these six cases, the pneumonia co-existed with more or less general bronchitis. Where pain in the chest existed from the commencement of the disease, the patients shewed decided evidences of pneumonia when received into

the hospital, while the bronchitic symptoms were slight, and did not become marked till after the disappearance of the local condensation ; in these cases, therefore, the disease may be inferred to have commenced in the parenchyma of the lungs. In the remaining three cases, the catarrhal symptoms, probably preceded the occurrence of inflammation in the tissue of the lungs. In four instances, the disease extended to the production of more or less extensive consolidation of one lung, and in two, there were evidences of condensation in portions of both lungs. When observed throughout their whole course, the cases presented the usual physical signs of pneumonia. First crepitation without material impairment of the natural sound on percussion, and subsequently bronchial respiration, and increased resonance of the cough and voice, with more or less decided dulness. The process of amendment was marked by the re-appearance of crepitation of a coarser character, the gradual disappearance of the dulness on percussion, and the return of natural vesicular breathing. With these signs, were also combined those, of bronchitis of the smaller tubes.

Of the general symptoms, by which the cases of pneumonia were characterised, the cough was one of the most troublesome. In three patients, all young persons, from eleven to fifteen years of age, and in whom there was extreme prostration of strength, there was throughout no expectoration : while in the others, the matters expectorated combined the characters of the sputa of pneumonia, with those of bronchitis, consisting of brownish coloured and viscid masses, containing small air-bubbles, intermixed with glairy fluid, either transparent or opaque, and with large bubbles of air.

Pain in the chest, though in three cases experienced at the invasion of the disease, was not generally present to any great extent, or only induced complaint during the paroxysms



of coughing. Dyspnœa, also, could not be regarded as a very decided symptom. In two cases, however, in which the disease was combined with extensive bronchial inflammation, there was considerable difficulty of breathing, and lividity of the face ; while two patients continued to lie in the recumbent position, either on the back or partly turned to one side, without experiencing material dyspnœa, though the local disease was very extensive. The respiratory acts were not generally much accelerated, having only ranged from 28 to 44 in the minute. In one case, the respiration was remarkably slow, and the sounds so feeble as to be scarcely audible.

The pulse was usually, but slightly, quicker than natural, numbering not more than 80, 90, or 100 beats in the minute. In one case, however, it was 144, at the commencement of the disease ; and, in a second, 136, during a relapse. It was uniformly either soft and compressible, or decidedly small and feeble. The skin was rarely dry or very hot, and if so at the earlier periods, as in the other forms of Influenza, soon became cool and moist. During a relapse, in one case, the skin was, however, intensely hot and dry, and in one or two others, though the temperature was not above the natural standard, there was a peculiar dryness and harshness of the skin.

The cases of pneumonia occurring during the epidemic of Influenza, were very generally complicated with evidences of gastro-enteric and hepatic disease. The tongue was usually red at the tip and edges, with a whitish-brown fur at the centre and root ; it was moist in the early stage and became dryer with the progress of the disease : in one case only was it very dry or brown. In two cases, there was decided jaundice, and in the others some degree of tinging of the conjunctivæ, and of the surface of the body generally. Loss of appetite, nausea and vomiting, in various degrees, were also early symptoms ; to which diarrhœa with tenderness and inflation of the abdomen



succeeded. The prostration of strength, which was much greater than in ordinary cases of pneumonia, was also usually present at the commencement of the attack, before the local affection had attained much importance. In several cases, particularly in two where relapses occurred, the depression of strength was extreme, while in two others, it was combined with great and peculiar torpor of mind, almost amounting to coma.

In one case, after partial recovery, the patient was seized on the thirteenth day from the commencement of his illness, with rigors followed by intense heat of skin, quickness of pulse, profuse perspiration, and diarrhœa, occasioning extreme exhaustion and aggravation of the local disease. In another, a relapse occurred on the sixteenth day of the disease. The symptoms were less severe at the first onset than in the former instance; but the prostration of strength which ensued was equally great. There was profuse diarrhœa, and a copious eruption of sudamina appeared on the abdomen and thorax, which continued for two days, with profuse perspirations, and there was severe pain in the back, loins and limbs. In a third instance, the subsidence of the pneumonia was followed by a circumscribed pleurisy and marked hectic symptoms, from which, however, the patient ultimately recovered.

Notwithstanding that the cases of pneumonia observed during the epidemic, presented a most threatening character, from the severity of the local affection, the complication with serious disease of other organs, and the extreme depression and prostration of strength with which they were attended, their result cannot be regarded as unfavourable, since of the seven cases, one only proved fatal. In strictness, perhaps, even this latter case, is incorrectly associated with those occurring during the epidemic, since the patient, a female, aged 64, was admitted into the hospital, fully a month before the general prevalence of Influenza, was labouring besides under purpura, and,

at the time of reception, had been for several days entirely destitute, and was in a dying condition. The other cases all yielded readily to treatment, and that too of a milder description, and less specific character, than would have been admissible in cases of sporadic pneumonia.

The less complicated cases were under treatment fourteen, fifteen, and twenty-six days, but those in which relapses occurred were detained eight and nine days after the period of relapse, and were discharged cured on the twenty-seventh and twenty-ninth days from the commencement of the disease. The patient in whom pleurisy followed the pneumonia, was under treatment forty-eight days. The ages of the patients were 11, 15, 18, 27, 37, and 64 ; and the first and last only were males.

### 3. LARYNGEAL COMPLICATIONS OF INFLUENZA.

In the notice of the epidemic as it prevailed among the children in Christ's Hospital, I have mentioned the frequent occurrence of some degree of laryngeal affection, indicated by a hoarse barking cough, and ending in three cases in decided croup. Among adults, too, a degree of sore throat, with a harsh cough and hoarseness, were very general symptoms. Though no case came under my own observation in which the patient laboured under acute laryngitis, or other severe affection of the throat, it would appear that these affections were prevalent at the time. From the tables of mortality, it will be seen that the deaths from croup, quinsey, and laryngitis, were during the epidemic much more numerous than usual. The deaths from the former disease, instead of 8 per week, the quarterly average, were only 6, 9, 5, and 7, in the several weeks during November, and rose to 11, 16, and 10, in the weeks ending December the 4th, 11th, and 18th ; and those

from quinsey and laryngitis rose from the average 4, to 11, 8, 6, and 9, on the 6th, 13th, 20th, and 27th of November, and to 7, 12, 11, and 12, on the 4th, 11th, 18th, and 25th of December. This fatality, however, appears to have been chiefly among children.

#### REVIEW OF THE RESULTS OF CATARRHAL FEVER WITH PULMONARY COMPLICATION.

On reviewing the cases of Simple Catarrhal Fever, and those with predominant affection of the air-passages and lungs, which are the most characteristic forms of the epidemic, and have already been stated to be those to which the term Influenza has generally been applied, they will be seen to amount to forty-eight in number; the whole of the cases of the disease under treatment in the hospital, during the months of October, November and December, 1847, and January, 1848, having been seventy-nine. This proportion by no means, however, correctly represents the relative frequency of the forms of the disease characterised by affection of the pulmonary and gastro-enteric mucous membranes, the cases treated in the Hospital consisting, as before stated, only of the more severe forms of epidemic, while a very large number of the slighter description, in which the catarrhal symptoms predominated, were prescribed for as out-patients. Of the proportionate frequency of the several classes of the disease, I am, therefore, unable to speak with exactitude.

*Mortality.*—In the following table, all the cases of the pulmonary form of the disease are arranged, without reference to the precise kind of local complication, so as to show the mortality in each sex, and at the several periods of life.

AGE.	Cases.	Deaths.	MALES.		FEMALES.	
			Cases.	Deaths.	Cases.	Deaths.
11 and 14	2	—	1	—	1	—
15 to 20	12	3	7	1	5	2
20 to 30	14	1	3	—	11	1
30 to 40	10	1	7	—	3	1
40 to 50	3	2	2	1	1	1
50 to 60	4	1	3	1	1	—
60 to 70	3	1	1	—	2	1
	48	9	24	3	24	6

The remark made in reference to the respective frequency of the two forms of the disease, applies equally to its fatality. Though from the very general prevalence of the disease, the mortality in the whole population was very greatly increased, yet, there can be no doubt that the proportion of deaths relative to the number of cases which occurred, was far from large. The facts here collected do not, it is true, appear to countenance this assertion, one-fifth nearly of the cases admitted into the hospital having proved fatal. It must, however, be remembered that the persons under treatment, were either such as presented the disease in its most severe form, or who were in a state of entire destitution before their reception, and, consequently, that no inference as to the ordinary mortality of the epidemic, can be deduced from the result of the disease under such circumstances. The cases are, also, too few to form a satisfactory basis for generalisation, and a reference to the preceding statements will show, that all those which proved fatal, were either complicated by organic disease, or by the presence of other serious affections. The facts can, indeed, only be regarded as showing the very unfavourable result of the disease when it attacks those previously in unsound health, or who have long been suffering from depressing causes. On

the other hand, the character of the epidemic in the young children at the Infant Orphan Asylum ; in the boys at Christ's Hospital ; in the adults at Wanstead and in the Police Force, sufficiently demonstrates its mildness under favourable circumstances.

In reference to the mortality of the epidemic of 1837, we are in possession of much information, derived from the observation of the disease both in this country and on the continent. In the report contained in the Provincial Transactions,\* it appears, that of 2347 cases, 54 proved fatal, or 2·3 per cent.† This probably may be considered a fair average ; but we find that under some circumstances, the mortality was much higher. Thus, Dr. Clendinning,‡ in the account of the epidemic, as he observed it, at the St. Marylebone Infirmary, states, that of nearly 1000 cases, 179 terminated fatally ; and that of 465§ patients admitted into the Institution, during the prevalence of the epidemic, 98 died, being upwards of one-fifth, or 22 per cent ; a mortality still higher than that of the Royal Free Hospital, but which is very readily understood, when the class of persons admitted into such Institutions is considered. Dr. Macleod's‡ experience of the severe forms of the epidemic is nearly as unfavourable. Of 40 of the more severe cases of the epidemic under his care, 5 proved fatal ; and Mr. Wakefield¶ asserts, that of 105 of the prisoners

\* Transactions of Provincial Medical and Surgical Association, vol. vi. p. 501.

† In one district in which the result in only a small number of cases is given ; the fatality was as high 5·5 per cent. In another, it was as low as 1·7. One gentleman states that, while he thinks he had attended not less than 500 patients, he did not see a single fatal case.

‡ London Medical Gazette, vol. xix. 1836-7, p. 780.

§ Ibid. 819.

|| Ibid. vol. xix. p. 784.

¶ Ibid. p. 705.



in the House of Correction, who were severely attacked with the disease, 10 died ; a mortality under the circumstances very high. M. Toulmouche,\* of 185 cases which fell under his notice in the prison at Rennes, states, that 8 proved fatal ; a proportion less than that afforded by the similar experience of Mr. Wakefield,† probably owing to the whole of the cases occurring being included in the number. Mr. Bullock, on the contrary, reports, that of 518 cases, he did not lose any. These statements, which appear at first sight so contradictory, may be reconciled by bearing in mind the very different character and results of the disease in the young or middle aged, previously in sound health, and in favourable hygienic circumstances, with those where the persons seized were further advanced in age, and already suffering under other maladies, or exposed to the operation of various depressing causes. It is obviously extremely fallacious to apply inferences, deduced from observations in one epidemic, to explain the rate of mortality in another ; yet it is probable that the recent disease was not ordinarily more fatal than the epidemic of 1837, and certainly were an approximative statement to be made, founded on the whole of the cases under my own observation, it would be, that the mortality of the epidemic of 1847, did not at the highest estimate, exceed 3 or 4 per cent.

Of the cases complicated with different forms of acute pulmonary inflammation, the class in which the disease assumed the form of acute capillary bronchitis, was the most numerous: eight examples of the idiopathic affection, three in which it appeared as a complication of phthisis, and two in which it was combined with ileac typhus, in all, thirteen cases of that form of disease, having fallen under my notice during the period of greatest prevalence of the Influenza, or between the 19th of

\* Gazette Medicale, de Paris, 1847. p. 858.

† London Medical Gazette, vol. xix. p. 700.



November, and the 15th of December. Subsequently, four other cases were admitted into the hospital, in which the disease assumed the sub-acute form, and which dated their commencement from the same period, as did several cases visited in my private practice. These details show the remarkable tendency to the occurrence of this form of disease, as a complication of Influenza, a fact not without interest, when the extreme infrequency of acute capillary bronchitis as a sporadic affection, at least, among adults, is considered. M. Fauvel's\* researches show, that in Paris the disease very rarely occurs in ordinary seasons; and during the period of nearly two years preceding the appearance of the Influenza epidemic, with my attention specially directed to the subject, I met with but seven cases, in my hospital practice, and of these, three only were examples of the acute idiopathic type. Pneumonia, on the other hand, does not appear to have been a frequent complication of the epidemic, only six cases of it having fallen under my view, during the period specified; three of which were preceded by more or less general bronchial inflammation, while in the three others, the disappearance of consolidation in the pulmonary tissue, was followed by general capillary bronchitis. It will also be seen, that the inflammation of the mucous membrane of the smaller bronchial tubes, was invariably a most alarming, and, in a large proportion of cases, a fatal malady; while all the cases of pneumonia which occurred, however threatening in appearance, were readily amenable to treatment, and terminated favourably.

Nor is the difference between the relative mortality of acute capillary bronchitis, and of pneumonia, when complicating Influenza, an accidental or casual peculiarity. Of nineteen cases of capillary bronchitis, constituting the whole of those

\* *Memoires de la Societ  Medicate d'Observation*, T. 2 me, p. 433. Paris, 1844.



seen by me, during two years, in my hospital practice, eight proved fatal, or, deducting seven, complicated with tuberculous disease of the lungs, or with cardiac affections, four of which died, the disease proved fatal in four out of twelve uncomplicated cases. M. Fauvel informs us, that of nineteen adults attacked with acute capillary bronchitis, ten died, and M. M. Mahot Bonamy, Marié and Malherbe,\* in their account of an epidemic disease, in which this affection occurred as a frequent complication, and which attacked certain regiments in garrison, at Nantes, in 1842, without stating numerically the results, speak of the extremely unfavourable issue of the cases under every system of treatment. Pneumonia, on the contrary, is not usually a fatal disease. During the last two years, I have treated in the hospital, twenty-nine cases of acute pneumonia, of which six, or excluding the case, before referred to, which occurred in a female labouring under purpura, and who died a few hours after admission, only five terminated fatally. Of the twenty-eight cases, two complicated with typhoid fever connected with enteric disease, one with rubeola, one with phthisis, terminating in gangrene, and one with disease of the heart, all died; while another case, combined with cardiac disease, one occurring in a person labouring under eruptive typhus, one complicated with phlebitis and extensive abscesses, one with a large and deep abscess on the groin, one with copious hæmoptysis, two with endocarditis, and the six cases occurring as complications of Influenza, with eleven cases uncombined with other disease, all recovered.

To the great and rapid fatality of inflammation of the mucous membrane of the smaller bronchial tubes, several

\* Archives Générales de Médecine, 4 me serie. T. 3. p. 236. and Gaz. Med. p. 779, 1843. According to the Editors of the Gaz. Med. (1847) the last epidemic was less frequently attended with acute capillary bronchitis, and other pulmonary complaints, than that of 1837, while it more frequently assumed the abdominal form.

causes conduce. M. Reynaud\* and Dr. Stokes, have regarded the living membrane of the capillary bronchial tubes, as partaking more of the properties of a serous than of a mucous membrane; and when inflamed, this tissue seems to combine the peculiar tendency to spread of the inflammation of mucous membranes, with that of serous inflammations to exude lymph. M. Fauvel, Andral and others, in France, have described the exudation from the inflamed membrane of the tubes, more particularly in children, as not unfrequently distinctly membranous; and, though I have not myself noticed this, I have before mentioned the peculiarly viscid character of the secretion, which fills the smaller bronchial tubes, in those who have died from this form of disease.† The effusion of a secretion of this description into tubes of small calibre, must seriously obstruct the free passage of air along them, and as the inspiratory is much more powerful than the expiratory act, the air will force its way through the secretion into the cells, but will, to a great extent, be precluded from returning, and thus the gradual entrance of fresh portions of air, will give rise to that inflation of the whole pulmonary tissue, which forms the peculiar anatomical feature of these cases. The obstruction of the smaller tubes must be further increased by the turgescence of their lining membrane, and probably, also, by the contraction of their muscular fibres, as evidenced by considerable difficulty of breathing being experienced before any material secretion can have occurred from the mucous membrane of the tubes,

\* Sur l'obliteration des Bronches, Mem. de l'Academie Roy. de Med. T. iv. 1834-35, p. 117.

† M. Nonat is mentioned (Gaz. Med. 1837) as having frequently found false membrane in the bronchial tubes after death, and the pulmonary complications of the epidemic of 1837. M. Toulmouche has also observed this in one case. M. Gluge refers to the same as occurring in the pneumonia of Influenza. Die Influenza oder Grippe, quoted in Brit. and For. Med. Review, vol. vii. p. 102.

and by the fact, mentioned by Laennec, of the extremely inflated condition of the lungs in persons poisoned by noxious gases. It is evident, therefore, that in the acute capillary bronchitis, if an appropriate course of treatment be not early had recourse to, so as to prevent the obstruction of the tubes, the process of aeration must cease, not in a limited portion of the lungs, as in cases of ordinary pneumonia, but over a large extent of their surface ; and, consequently, that symptoms of apnœa, with failure of the vital powers, will rapidly ensue, and render all remedial efforts unavailing.

*Emphysema Pulmonum, &c., as a sequence of Acute Capillary Bronchitis.*—The danger of acute bronchitis, as a complication of Influenza, is not, however, limited to its immediate effects. Cases which have fallen under my notice, have led me to believe, that though the acute symptoms may be subdued, the patient may be left subject to the suffering and danger of chronic asthma, dependent on an emphysematous condition of the lung. It is true, that in no instance under my care, in the early stage, have I seen this result ensue ; but I have repeatedly had occasion to examine persons in whom asthmatic symptoms dependent on emphysema, were referred to attacks of acute pulmonary inflammation connected with Influenza.

In the class of sub-acute, or chronic, affections of the bronchial mucous membrane, termed by Laennec, somewhat incorrectly, though sufficiently expressively, Dry Catarrh, and which is so frequently a cause of emphysema of the lungs, the production of that condition is assigned to the very viscid character of the secretion in the smaller tubes, obstructing the escape of the air from the cells, but allowing at the same time the entrance of fresh portions of air, from the greater power of the inspiratory than of the expiratory act, so as to occasion a state of inflation, which, from the long continu-

ance of the obstructing cause, becomes at length a permanent condition.

In cases of acute capillary bronchitis, we have seen that a precisely similar inflated condition of the lungs is rapidly produced ; and when the very slow subsidence of this inflation, in the cases which, after appropriate treatment, terminate favourably, is considered, it seems highly probable that, when the disease has been neglected in the early stage, the expansion of the air-cells may, in these cases, also become permanent.

Experience has amply demonstrated that, though emphysema of the lungs is most frequently found in persons of advanced age, and in those who have long suffered from chronic bronchial affections, yet it is by no means unfrequent in young persons, and occasionally occurs in an acute form. Cases of this kind have generally been attributed to rupture of the air-cells, during violent fits of coughing ; a theory which is supported by the fact, that emphysema of the lungs, in young persons, is very frequently traceable to attacks of hooping cough. In many instances, however, there exists no evidence of the patient having ever suffered from any severe form of cough, and the almost invariable connexion of these cases with attacks of acute pulmonary inflammation, the known frequency of acute capillary bronchitis in hooping cough, and other infantile diseases, and the ascertained anatomical feature of the latter disease, all tend to support the inference, that the cases of emphysema occurring in early life, have resulted from the imperfect cure of acute inflammation in the smaller bronchial tubes. How far, however, these views are correct, must be hereafter decided by carefully collected observations.

Closely allied with the development of emphysema, as a sequence of the acute capillary bronchitis of Influenza, is the production of a permanently dilated condition of the smaller



bronchial tubes. We have already seen, that in the cases fatal during the acute stage, the smaller tubes, and especially those in parts of the lungs affected by lobular pneumonia, were very generally found of larger calibre than usual, and distended with secretion. In a case which ended fatally, several months after the acute symptoms had subsided, from the pressure exerted by an aneurism of the aorta on the recurrent laryngeal nerves, the tubes, in some portions of the lung, were found so considerably dilated as to be frequently much larger at their terminations than in their course, and this was more particularly the case in parts of the lung affected with chronic lobular condensation. This state seems to result from that before described, and admits of ready explanation. The first effect of inflammation or irritation in the mucous membrane of the bronchial tubes, as of inflammation in any other part similarly constituted, is, to occasion constriction of the calibre of the tubes, from the action of their contractile fibres; with the advance of the disease, however, the opposite condition is induced, and the tubes, losing their natural elasticity, admit of dilatation by the accumulation of viscid secretion within them. This distension, if only of short duration, does not prevent the tubes, from recovering their natural dimensions when the accumulation subsides: should however the secretion continue for a length of time, to augment in quantity, the dilatation not only increases, but becomes a permanent condition; and, it is obvious, this will most readily be the case, when the affected tube communicates with a mass of lung, itself the seat of inflammation.

*Phthisis Pulmonalis as a complication, and sequence of Influenza.*—Of the various complications of the pulmonie form of Influenza, the most fatal is, probably, that in which the disease supervenes upon a previously tuberculous state of the lungs; the immediate danger in this case being very great,



while, should partial recovery ensue, the progress of the organic affection is almost necessarily much accelerated.

Of the cases of the epidemic under treatment, in the hospital, six were regarded as probably complicated with tubercle in the lungs, and in three of these, the acute attack proved fatal, while in the other three, though the patients recovered sufficiently to leave the hospital, there remained great suspicion of the supervention of phthisis. In another case, subsequently admitted, of lobular pneumonia, with general capillary bronchitis, occurring during the progress of an attack of macculated fever, phthisical symptoms appeared after the acute pulmonary affection subsided; and in recent practice, several cases of decided phthisis have fallen under my notice, in which the patients dated the commencement of their illness from attacks of Influenza.

In the cases in which phthisis occurs after Influenza, the form of disease is probably somewhat various in its nature. In a case of capillary bronchitis, which had gone on to secretion before admission, the patient, a female, twenty-nine years of age, recovered sufficiently to leave the hospital, but subsequently, died of an aneurism of the aorta, pressing on the inferior laryngeal nerves and trachæa. In this case there was found extensive chronic lobular condensation in different parts of both lungs. The condensed portions were chiefly situated towards the edges of the lungs, and especially at the outer edge of the upper lobe of the right lung, and of the lower lobe of the left lung. They were in general extremely hard, distinctly bounded by the interlobular cellular septa, and some of them, which were resolved into a defluent pulp in the centre, communicated by large openings, with the bronchial tubes. At the apex of the right lung, there existed a large mass of solidified pulmonary tissue, around which a general softening had occurred, so as almost completely to insulate it.

The bronchial tubes in the affected parts, were much dilated, and filled with viscid secretion, and the glands were enlarged, solid, and of a mottled grey colour.

This state of disease, which may be regarded as the result of chronic lobular pneumonia, may probably not unfrequently be the form of phthisis which supervenes on the pulmonary affections of Influenza, as it is by no means an unfrequent form of infantile phthisis. It is, however, very probable that, in the majority of cases, the phthisical symptoms are due to the tuberculous disease, called into active operation by the attack of pulmonary inflammation.

*Disease of the Heart as a complication of Influenza.*—The complication of Influenza with disease of the heart, though less frequent than the occurrence of the epidemic in persons previously suffering from organic disease of the lungs, is also very fatal in its result. Of the six cases included in the report, in which with bronchitis, there existed some form of disease of the heart or aorta, four proved fatal; of these, however, in two, the cardiac affection was chiefly recent, consisting of peri-and endo-carditis, while of the remaining four, one only sank under the immediate effects of the disease. In this case, that of a lad of eighteen, who had from early life been deeply cyanosed, and in whom the chest was very contracted, death occurred from collapse very shortly after admission. On examination, the lungs were found imperfectly expanded, sparingly crepitant, and of a deep blue colour, the bronchial mucous membrane was much reddened, and the smaller tubes distended with secretion, as in ordinary cases of bronchitis. The heart presented a very aggravated example of hypertrophy, and dilatation of the right auricle and ventricle. The other fatal case, was that of the female who died of aneurism of the aorta after the acute symptoms had, to a considerable extent, subsided. The two cases in which the patients recovered, were

regarded as examples of mitral valvular disease, in one, of a very aggravated description. In a third case of the same form of disease, not in the hospital, the patient also recovered from a severe attack of Influenza.

From these facts, and on theoretical grounds, it seems probable, that the most unfavourable cardiac complication of Influenza, is that in which there exists a dilated condition of the right cavities of the heart with chronic bronchitis, but when the disease supervenes in persons labouring under valvular affections of the left side of the heart, the chances of recovery from the immediate effects of the disease are greater. In several cases which I have recently seen, the former class of symptoms were stated to have been either materially aggravated, or first experienced, after attacks of Influenza.

## EPIDEMIC CATARRHAL FEVER WITH ABDOMINAL COMPLICATION.

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The cases of the epidemic in which the predominant symptoms were those of disorder of the gastro-enteric mucous membrane and liver, amounted in number to thirty-one, out of the seventy-nine cases of the disease admitted into the hospital, during the prevalence of the epidemic. These may be divided into, 1st, Cases characterized by disorder of the gastro-enteric mucous membrane ; 2nd, Those in which the enteric affection was combined with various degrees of hepatic derangement, and a tendency to relapse or to assume a remittent character ; and, 3rdly, Those complicated with rheumatic symptoms.

### 1. CATARRHAL FEVER WITH DISORDER OF THE GASTRO- ENTERIC MUCOUS MEMBRANE.

Patients affected with this form of disease, in a mild degree, usually stated, on their admission, that they had been more or less indisposed for periods varying from three or four, to ten or fifteen days. The symptoms, in these cases, were throughout of a slight character, or if at first more urgent, generally subsided into a mild form at the end of a few days. The pulse was seldom materially accelerated, unless at the commencement of the attack. The skin was not generally very hot or dry, and soon showed a tendency to become moist. The tongue usually continued moist, and was covered with a creamy mucous, or whitish fur, and was red towards the

extremity. There was generally some slight cough and difficulty of breathing. The bowels were usually torpid, but occasionally, and especially when the disease was about to subside, there was slight diarrhœa, which sometimes also appeared at an early period. There was often troublesome vomiting. With these were combined the ordinary febrile symptoms, prostration of strength, pain in the head, back, and loins, loss of appetite, restlessness, &c. This form of disease was ordinarily of short duration, the convalescence being established from four to seven days from the commencement of the attack ; so that of fifteen cases under treatment in the hospital, the mean period of detention was between seven and eight days.

The more severe cases of this description usually commenced very gradually, so that it was difficult to ascertain the precise period of invasion. The symptoms, at first of a mild character, after the disease had continued to advance for a week or ten days, began to assume a more threatening aspect ; the pulse became feeble and quick, rising to 120, 130, or 140 in the minute, the tongue became dry, acquired a thick brown coating and was morbidly red at the tip and edges, and often chapped and painful. The teeth were covered with yellowish brown sordes. The skin was hot, dry and harsh, and continued free from moisture when its temperature had declined. From an early period there was much restlessness and inability to sleep, often combined with torpor, so that the patient was with difficulty aroused ; and, subsequently, delirium made its appearance, generally of the low muttering form, but in several cases, so active as to require restraint. With the progress of the attack the usual comatose tendency appeared, and in one case, death was preceded by convulsions. The abdomen was generally at first somewhat tympanitic, and afterwards became tense and tender to the touch, and frequently a gurgling sound and feeling of fluctuation was caused by pressure in the ileo-

cæcal region. In the early stages the bowels were not unfrequently confined, though usually more relaxed than in a state of health ; and, at a later period, there were frequent liquid stools, with occasionally some blood in them. In some cases the stools were passed involuntarily. A slight jaundiced tinge, either confined to the conjunctivæ or extending over the skin generally, was usually present. Some degree of pulmonary disorder, characterised by hurried respiration, cough, and the usual physical signs of febrile bronchitis, was also very generally observed. In one case only of this form of disease was any eruption detected on the skin, though careful examination was daily instituted. In this instance, it was not the usual form of typhoid eruption, but consisted of small acuminate pimples, few in number, which appeared on the surface of the abdomen on the sixth day after admission, and the twentieth of the disease.

From the difficulty of ascertaining the precise period of seizure in these cases, and the close similarity of the several abdominal forms of the epidemic, it is not possible to state the precise duration of illness in each. In the present class, however, the period of residence appears to have been eighteen or twenty days ; and as the cases were admitted between the sixth and the tenth days, we may estimate the total duration of illness at from twenty to twenty-five or thirty days.

## 2. CATARRHAL FEVER WITH AFFECTION OF THE GASTRO ENTERIC MUCOUS MEMBRANE AND LIVER, AND CHARACTERIZED BY TENDENCY TO RELAPSE OR TO ASSUME A REMITTENT CHARACTER.

These cases were usually ushered in by severe febrile symptoms, such as rigors, followed by great heat of skin and depression of strength, which led the patient to apply early for



admission into the hospital, as on the third or fourth day. In some instances, however, the invasion was more gradual, one or two weeks having elapsed from the commencement of indisposition, before the symptoms became urgent.

When the attack was sudden, the symptoms usually assumed a sthenic type, the pulse being full and bounding, 110 to 120 or 130 in the minute ; the skin hot and dry ; and the mouth and tongue dry and parched. There was thirst and loss of appetite, with often bilious vomiting, pain in the head and loins, and general oppression and prostration of strength. When these symptoms had continued for an interval, varying from a week to ten days, improvement began to take place, and the patient became so rapidly convalescent, as to be able to leave the bed in a much shorter time, than, from the urgency of the previous symptoms, could have been supposed. After the lapse of a few days, however, in different cases, on the eleventh, twelfth, thirteenth, and fourteenth days from the commencement of the attack, sudden relapses occurred. The patient was seized with violent rigors, followed by pungent heat of skin, dryness of the surface, throbbing and pain in the head and loins, and a full bounding pulse, to which succeeded profuse perspiration, continuing from a few hours to a day, or a day and a-half, and attended with extreme prostration of strength. The pulse then became small, feeble, and faltering, and was often unusually slow, not numbering more than 60, 50, or even 40, beats in the minute. The tongue again acquired a dryish and thick whitish-brown, or yellowish coating. The skin became cool, or absolutely cold, and assumed, with remarkable rapidity, a jaundiced hue of varying intensity, and there was pain or tenderness, on pressure, in the right hypochondrium. The abdomen was generally distended, and most frequently diarrhœa supervened, with copious liquid stools, often containing considerable quantities of more or less altered blood.

These symptoms continued for three or four days or more, when the patient would again begin to recover, and usually regained his strength rapidly. In some cases, relapses of this description, occurred two or three times, with well-defined intermissions, of one or two days duration ; in others, the febrile symptoms, though slighter in the intervals between the paroxysms, never entirely intermitted.

In the cases of remittent fever, in which the febrile symptoms were more gradually developed, the disease generally assumed a low type. The skin was at an early period cool, but not particularly dry, and from the first slightly jaundiced. The tongue was covered with a thick fur of a yellowish white colour, and was somewhat dry. The pulse was feeble and quick, numbering 130 to 140 or 150 in the minute, and there was great prostration of strength, with a torpid and oppressed state of mind. With the progress of the disease, the jaundice became more intense, and urgent vomiting of the dark bilious or bloody fluid, which resembles coffee grounds, was general ; and there was often acute tenderness on pressure, or decided pain in the region of the liver and in the epigastrium, with a tympanitic state of the abdomen. Diarrhoea was very generally present, and large quantities of nearly pure blood were often voided by stool ; epistaxis was also a frequent symptom.

In these cases, the remissions which occurred, were either not very distinctly marked, or the disease at its commencement maintained the continued form ; but after a week or ten days it assumed an imperfectly intermittent or paroxysmal character, the symptoms undergoing exacerbation at intervals, and the increased excitement being succeeded by extreme depression of strength, with profuse perspiration. Sometimes the paroxysms occurred regularly every day, or every other day ; in other instances, they came on, at uncertain periods, several times during the day.

Generally speaking, the cases of simple remittent fever were of short duration, the patients remaining in the hospital on the average about fifteen days ; but when relapses occurred, after more or less advanced convalescence, the period of residence usually extended to from twenty to thirty days.

### 3. CATARRHAL FEVER, WITH AFFECTION OF THE GASTRO-ENTERIC MUCOUS MEMBRANE AND LIVER, COMPLICATED WITH RHEUMATISM.

The only remaining class of cases observed during the recent epidemic, to which I shall have occasion to allude, is that in which the low form of fever, with hepatic and enteric disorder, was complicated with severe rheumatic symptoms.

In these cases the pains in the head, back, loins, and extremities, which were present with more or less severity in all the forms of Influenza, were from the first of a severe character, or increased with the progress of the disease, till they constituted its predominant feature. The pain was usually most distressing in the head, especially in the forehead, and in some cases, was limited to one temple, or to one eyebrow or eyeball. It was generally of an intermittent or remittent character, coming on every night, after a more or less distinct intermission during the day, and attended with singing in the ears, distressing restlessness, agitation, and inability to sleep. Delirium was most generally present. In some cases, it only amounted to a little excitement or incoherence during the evening exacerbation ; but, in others, it was so active as to require the employment of restraint to retain the patient in bed, and continued, with little intermission, for many hours. With these symptoms, there was usually much tremour of the hands, and the eye was pale and glassy. In one or two cases only, was there any injection of the conjunctival vessels ;

but the pupil was frequently contracted, and sparingly sensible to the stimulus of light. There was very generally a jaundiced tinge of the skin, and not unfrequently bilious vomiting, and the surface was usually cool, and bathed in acid perspiration. In four of the most marked cases, a murmur was audible in the præcordia, with the impulse of the heart. In three of them, the murmur was heard most intensely at the apex, and in the fourth, at the base of the heart. The second sound was usually short and flat. Early in the attack, the pulse was quick and feeble, and of a peculiarly vibratory character, though sometimes it was but little accelerated; and, at a later period, it either became very rapid and feeble, or fell below the natural standard of frequency, being very soft and compressible, and occasionally intermittent. The tongue was coated with a thick whitish-brown fur, and red at the tip. At first moist, it became dryer with the progress of the disease. The breath had in these cases, and to a less marked degree in the other abdominal forms of the epidemic, a peculiarly unpleasant acid and fetid odour. Diarrhœa, with discharge of blood, was very general, and epistaxis frequently occurred; in one case to an alarming extent.

In the cases which assumed a paroxysmal character, the collapse succeeding the exacerbations was often extreme, the perspiration being so profuse, as to soak through the bed-clothes, whilst the hands and feet became cold and livid. In one instance, a patient suffering under constant diarrhœa lay for thirty-six hours, with the whole surface bathed in profuse perspiration, and with the hands and feet to above the wrists and ankles, perfectly cold and blue.

In all the forms of febrile affection, observed during the epidemic, and especially in the latter, the urine was at first scanty, and high coloured; with the advance of the disease towards convalescence, it became more copious, and deposited

much lithic sediment. In one case of the low remittent form, it was slightly albuminous.

The duration of the disease in the most characteristic cases of the remittent fever with rheumatic complication, was twenty-five, twenty-nine, fifty-three, and fifty-four days; the cases being respectively detained in the hospital twenty-one, twenty-three, twenty-six, and thirty-two days.

*Other complications of the abdominal forms of the Epidemic.—Bronchitis, Pneumonia, &c.*—Pulmonary affections were the most general forms of complication of the different febrile diseases described. In some of the cases of fever which occurred at the time of the epidemic, the bronchitic affection did not, it is true, assume a more important character than in the ordinary autumnal or vernal fevers, but more generally, severe bronchitis or pneumonia, formed predominant features of those diseases. In two cases, general capillary bronchitis occurred; in a third, there was extensive pneumonia; and in two others, in which the pulmonary symptoms so far predominated, as to have induced the classification of the cases under the head of the Pneumonic Complication of the Epidemic, the occurrence of severe relapses, and of very marked symptoms of gastro-enteric and hepatic disorder, closely associated the disease with the second form of fever described.

In the cases where capillary bronchitis occurred, the general symptoms differed somewhat from those usually characterizing that form of complication. The cough was seldom so frequent or so severe, and was attended with little or no expectoration; and though there was very marked lividity of the face and extremities, and the cheeks became intensely congested during the paroxysms of coughing, and respiration was very rapid, the amount of dyspnoea was not sufficient to prevent the patients occupying the recumbent position. The early stage, exhibited the usual feebleness of respiration with occasional sibilant



rhonchus, followed by mucous-crepitating rhonchi, which were extensively audible, especially in the dorsal and lateral regions inferiorly. Still later, mucous sounds predominated. In one of these cases, *diphtheritis* was also indicated by a peculiar huskiness of the voice and cough, which supervened a few days before death; and in the other, *stomatitis* was present, nearly from the commencement of the attack, the tongue being painful, much swollen, intensely red, and partially chapped and ulcerated, while the lining membrane of the mouth was everywhere inflamed. In both instances, there was constant delirium of the low muttering form, with more violent intervals; and in all, where the pulmonary symptoms were predominant, the prostration of strength appeared at an early period, and attained an extreme degree.

*Peri-and Endo-Carditis.*—In the cases of low rheumatic fever, it will be remembered the first sound of the heart was accompanied by a morbid murmur. The precise cause on which the production of this symptom was dependent in these cases may be open to doubt; but taken in connexion with the obvious rheumatic symptoms, with which the development of the murmurs coincided, they would seem to have been due to some amount of rheumatic endo-carditis. The situation in which they were most distinctly audible, being in three of the cases the apex of the heart, tends to confirm this opinion, and their disappearance or decline under an anti-rheumatic course of treatment, is equally corroborative. The effect of any amount of organic change which may have existed, was, however, probably aggravated by the peculiar condition of the blood, a supposition which seems necessary to explain the entire disappearance of the murmurs in two of the cases, and the very great decrease of their intensity in the others, under a comparatively short course of treatment, and with the returning strength of the patients. Had the murmurs been wholly de-



pendent on organic changes, the increased power of the cardiac pulsations would have rendered them more conspicuous.

In enumerating the several varieties of catarrhal fever with predominant pulmonary disease, I have alluded to two cases in which capillary bronchitis co-existed with pericarditis. The subject of the first of these was a man of irregular habits, 46 years of age, a casual porter at the hospital, who had long suffered from symptoms of chronic bronchitis with enlarged heart. He had been assisting, a few days before his seizure, at a post mortem examination in the dead-house, and stated that he had pricked his finger. The attack commenced with rigors, increased cough, and difficulty of breathing, and he had a peculiarly excited manner and much tremour of the limbs. He pointed out a slight sore on one finger; but there was no swelling of the hand or arm, nor any appearance of inflammation of the glands or absorbents. He was removed into the surgical ward, and died somewhat suddenly, two days after his admission. On examination, the pericardium was found to contain a large quantity of dark coloured and opaque serum, with flakes of lymph intermixed. The cavities of the heart were dilated. The lungs were much congested and sparingly crepitant, the bronchial tubes were full of secretion, and the mucous membrane was reddened. The liver was in an advanced state of cirrhosis. The kidneys were free from any appearances of disease.

In the second case, the patient was a man 51 years of age, and of irregular habits. He had been declining in health for a considerable time, and had been ill for one month before his admission. When I first saw him, he was extremely prostrated, and there was such torpor of mind that it was impossible to collect any satisfactory history of his illness. He lingered ten days, and during this time had no lividity of the face or difficulty of breathing, and scarcely any cough or ex-

pectoration. There were the usual physical signs of bronchitis, and the muco-crepitating ronchi were more or less audible in all parts of the lungs, but especially in the dorsal regions. Two days before his death, he complained of pain in the præcordia, and a peculiar double-flapping sound was there heard, synchronous with the impulse of the heart. He had no obvious rheumatic symptoms, but there was a greater degree of difficulty in moving than could be explained by the apparent degree of prostration. The pulse was at first extremely feeble and quick, but latterly it was less rapid, though not stronger than before. On examination, the lungs were found to be emphysematous in front, and overlapping the heart, while the smaller bronchial tubes were filled with mucous, and their lining membrane was much injected. The pericardium was distended with a large quantity of turbid serum of a yellowish colour, and a layer of soft lymph covered both surfaces of the membrane. The sub-pericardiac cellular tissue was infiltrated with pus, as was also the substance of the heart to a greater or less depth, so as to render it very readily lacerable. The lining membrane of the cavities of the heart, more especially of the left ventricle, was much reddened, and at the apex the whole thickness of the wall of the left ventricle was involved, and a coagulum, consisting in part of blood and partly resulting from exudation, was there attached. The serous membrane of the aorta was dyed of a deep mahogany colour, and a layer of lymph lined the interior of the ascending portion. There was also old disease of the heart, in the form of general dilatation of its cavities, with aneurism of the left coronary artery, which it would be superfluous in this place to describe more particularly. The occurrence of decided peri- and endo-carditis in these instances, confirms the inference drawn as to the cause of the cardiac murmurs in the cases of low rheumatic fever.

*Erysipelas, &c.*—In the febrile forms of the epidemic, erysipelas was, next to bronchitis, the most frequent and severe complication. In one ward, where a large number of individuals had for several months been under treatment, almost every patient received, during the period of prevalence of the epidemic, was attacked with erysipelas after admission; and as this tendency subsided, when the ward had been for some time empty, and was thoroughly cleansed, the erysipelas was probably partly ascribable to local causes. The great frequency of this disease, was, however, one of the common features of the epidemic; the deaths registered from this cause, as shown by the Reports of the Registrar-general, being much more numerous than usual during its prevalence. In the hospital, cases both of traumatic and idiopathic erysipelas were not only unusually frequent; but, from the very great prostration of strength by which they were attended, their frequent complication with bilious vomiting, jaundice, diarrhoea, and petechial eruptions on the skin, they displayed a strong similarity to the other forms of febrile disease then prevalent. The eruption when it supervened after the patient had been some time under treatment, usually made its first appearance around parts on which blisters or leeches had been applied, but in other cases it occurred when no irritation of the kind had existed. In one instance, *absorbent inflammation* characterized by streaks of redness running up the foot and leg, with red patches at intervals, commenced around several of the toes which had been denuded of their nails by the patient while delirious in the night. Two other cases of absorbent inflammation, were also admitted into the hospital during the epidemic. In one of these, which was ascribed, somewhat doubtfully, to a dissection puncture, the patient, a porter in the hospital, had low typhoid symptoms, and extensive diffused suppuration in the upper arm.

*Otitis*.—Among the complications of the several forms of febrile affection, that of purulent discharges from the ears must also be mentioned as of frequent occurrence, particularly where there had been erysipelas of the head and face. They also, however, happened independent of any such eruption. In these cases, the formation of matter was preceded by singing in the ears, deep-seated pain extending thence to the forehead and face, tenderness on pressure beneath, and in front of, the ear, and deafness, with, in some cases, delirium or torpor of mind. These symptoms occasionally occurred without being succeeded by any discharge; but more frequently they were followed by an escape of yellowish fetid pus in considerable quantity, a day or two after their commencement. Sometimes the discharge was confined to one ear, in others it affected both, and it generally continued for several days.

*Parotitis, Abscesses, &c.*—In one instance of the low typhoid form of fever, in a girl 20 years of age, of a strumous habit, both parotid glands became, early in the disease, swollen, tender and painful, and subsequently extensive abscesses formed discharging a caseous matter mixed with sero-purulent fluid. Erysipelas of the head and face ensued, and the patient only recovered after a prolonged struggle. In a second instance of the bilious remittent fever in a native of Calcutta, 28 years of age, a large abscess, containing very fetid pus, formed in the cellular tissue around the anus. In several others, more particularly in the erysipelatous cases, extensive diffused or circumscribed supuration took place in the cellular tissue of different parts of the body, especially of the scalp, axillæ and back; and in one case, an eruption of boils followed the subsidence of the disease.

*Gangrene of Toes*.—In one instance of subacute capillary bronchitis with great prostration of strength, torpor of mind, and low typhoid symptoms, which occurred in a man long

suffering under destitution, and 47 years of age, the three toes of the left, and the great toe of the right foot, were gangrenous at the period of admission: under a nutritious and tonic course of treatment, however, the disease was arrested after the loss of the first toe of the left foot, and the formation of integumental sloughs on the others, and the patient was discharged nearly well of the pulmonary affection, after a residence of sixty-three days.

The only other complication of the cases of fever, was the occurrence of abortion in a woman labouring under the first form of the disease. It has been already remarked, that the deaths from child-birth were especially numerous during the period of the epidemic, and most probably, this was owing to the frequency of puerperal fever. Uterine hæmorrhage and abortion, were also of common occurrence during the time.

*Forms of eruption on the Skin.*—A peculiar feature of the forms of fever described, as observed during the prevalence of the epidemic, was the very rare occurrence of the eruption on the skin characteristic of typhus.

In the spring of 1847, and during the previous winter, typhus with an eruption on the skin was especially frequent, but with the advance of the season, as the gastro-enteric and hepatic forms of fever became prevalent, the eruption was but rarely seen, and during the epidemic of Influenza, was almost entirely absent.

Of the cases of fever which were admitted into the hospital, during the four months referred to, three only had a decided typhoid eruption on the skin, of the usual roseolous character, and fading on pressure. One of these patients was admitted in November, one in December, and one in January. In two of them, the fever assumed the continued form, with local complication, involving the brain, lungs, and abdominal organs. In one case, the eruption appeared on the fifth day of the



disease, and continued till the twelfth. In the other, it was out at the time of the patient's admission, on the eighth day of the disease, and had disappeared on the fifteenth, being combined on the tenth with a purpurous eruption, characterised as usual by its deeper colour, and by its not being affected by pressure. The third case was an example of the low remittent fever, with rheumatic and abdominal complication. The precise period of illness, at the time of admission, could not be ascertained, and the eruption, which did not appear till the ninth or tenth day from admission, continued till the sixteenth. A purpurous eruption was also observed in this case on the fourteenth day. In a fourth example of slight continued fever, there was a suspicious mottling of the skin of the abdomen on the fourth day of the disease, which did not more fully develop itself. In a fifth patient, labouring under the remittent rheumatic fever, a slight eruption of small acuminated, and somewhat pustular looking spots, appeared on the upper part of the thorax on the sixth day from admission, and the eighth of the disease; and, in a sixth case of continued fever, with enteric and pulmonary complication, a few pimples appeared on the abdomen on the sixth day from admission, and the twentieth of the disease, and continued out two or three days. These constituted the only cases in which any roseolous or papular eruption occurred in the hospital during the period of the epidemic; but in the months of February and March, 1848, as the forms of febrile disease described as characteristic of Influenza, became less frequent, a fever with a distinct and very full roseolous eruption, more sthenic in character, and displaying the more ordinary symptoms of typhus, became the most frequent form of disease.

The appearance of an herpetic eruption around the mouth, has already been mentioned as of occasional occurrence in the pulmonic forms of Influenza. In those cases in which the



abdominal organs were predominantly affected, a vesicular eruption (*sudamina*) also not unfrequently appeared on the abdomen or sides of the neck, and spread over some extent of the trunk and extremities. It was most frequently met with in the forms of fever prevalent during the summer of 1847 ; but was also observed occasionally at the period of the Influenza, and has again become frequent during the present summer. The eruption was most generally miliary, assuming the form of small round and shining bodies ; but sometimes it consisted of larger and flatter vesicles. The time of its appearance was towards the later stages of the disease, as from the eighth to the tenth, or fifteenth days, or even at a still more advanced period. In several instances, this eruption succeeded to the disappearance of the ordinary typhoid roseola ; and in two or three cases, immediately followed or coincided with the appearance of a few small pimples on different parts of the abdomen and thorax. It usually remained on the skin from two to four or five days. The fluid in the vesicles was at first transparent, but subsequently became opaque, and the eruption then commonly disappeared with slight desquamation. The breaking out of this eruption usually coincided with amendment in the general symptoms, and some relaxation of the pores of the skin, as indicated by partial perspirations, chiefly about the face, neck, and upper part of the chest ; but the skin in the actual seat of the eruption was very generally harsh and dry during its continuance. In one or two instances only, were general perspirations observed during the presence of the eruption ; and in none of the cases of low remittent fever with profuse perspirations, was any eruption of this kind detected. With one exception, in which death occurred from secondary disease during convalescence, all the cases of fever in which the eruption of *sudamina* was noticed, terminated favourably. In a fatal case, however, which occurred since the period of the

Influenza, a very copious eruption of this description appeared two days before death.

It has been mentioned, that in some of the cases of fever, purpurous spots, not fading on pressure, made their appearance. These were either of small size, (*petechiæ*,) or larger (*vibices*,) and were situated on the lower extremities or abdomen, and nearly always appeared only at the later periods of the disease, and in some instances, followed the disappearance of the typhoid eruption. In the latter event, the roscolous spots became gradually more livid, and faded less completely on pressure, till at length they were altogether unaffected by it, and assumed the usual character of purpura. In some cases, especially those in which there was copious epistaxis and discharge of blood from the bowels, the purpurous eruption was present from an early period ; but this happened oftener in the early summer and spring of 1847, when scorbutic affections were generally prevalent, than during the epidemic of Influenza.

#### RESULTS OF EPIDEMIC CATARRHAL FEVER WITH ABDOMINAL COMPLICATION.

Owing to the gradual mode in which the several varieties of epidemic catarrhal fever with predominant abdominal affection for the most part lapsed into each other, it is not possible to classify the cases so accurately as to state numerically the respective fatality of each form. I have therefore arranged in the following table, the whole of the cases, so as to show the mortality in each sex, and at the several decennial periods of life, without respect to the particular character assumed by the disease.

AGE.	TOTAL.		MALES.		FEMALES.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
15 to 20	10	3	7	2	3	1
20 to 30	12	1	8	—	4	1
30 to 40	5	—	4	—	1	—
40 to 50	2	—	2	—	—	—
50 to 60	2	1	1	—	1	1
	31	5	22	2	9	3

It will be observed, that this statement shows a very large mortality in the comparatively few cases of the abdominal from of the epidemic under treatment in the hospital. It must, however, be remembered, that the patients received into the wards were selected for the severity of their attacks, or for their state of destitution; they, therefore, necessarily present results less favourable than if the calculation were founded upon a wider range of cases.

Of the five fatal cases, four were examples of continued fever with intestinal disease, and of these, one, a male, 14 years of age, died on the fourth day after admission, and the seventh or ninth of the disease. He had been found lying in the street, and was dying when admitted. The second, a female 30 years of age, died on the twelfth day after admission, and the twenty-sixth from the period of seizure, with symptoms of cerebral effusion, and after having miscarried five days before of a fifth month fœtus; the third, a male of 18, died on the fourteenth day after admission, and thirtieth of the disease. In the latter case, there was much delirium, and the fever was complicated with marked capillary bronchitis, diphtheritis, and absorbent inflammation occurring towards the end of the attack. The fourth, a female of 19 years of age, died on the twentieth day after admission, and the twenty-seventh after seizure. The disease assumed the form of low fever, with

much delirium, extensive bronchitis, and evidences of gastro-enteric disorder, which were, however, to a great extent recovered from, when death was occasioned by sloughing of the vulva connected with gonorrhœa.

The *morbid appearances* discovered in the alimentary canal, in these cases, varied with the period at which death occurred. In the case fatal on the seventh, eighth, or ninth day of the disease, the solitary glands were very greatly enlarged, from the commencement of the ileum to the descending portion of the colon, and displayed small ulcers, surrounded by intensely inflamed mucous membrane, in the lower part of the ileum and cœcum. The aggregate glands were also enlarged throughout the course of the ileum, and towards the termination of that intestine, displayed large elevated surfaces of thickened and reddened mucous membrane, with portions in the state of gangrene, or with the usual yellow-coloured sloughs, more or less completely separated. The ileo-cœcal valves were much swollen, and densely covered by sloughs of this description. In the case fatal on the twenty-sixth day from seizure, the aggregate glands, more especially in the lower part of the ileum, were found somewhat enlarged and surrounded by inflamed mucous membrane. In that fatal on the twenty-seventh day of the disease, the lower portion of the ileum displayed the most extensive disease in different stages of recovery. In some parts, there were large ulcers with abrupt edges and deeply excavated surfaces, at whose bases, in several instances, the muscular coat of the intestine was freely exposed; in others, the ulcers were smaller, shallower, and bounded by depressed edges shelving towards the centre, as if in process of healing; and in yet others, the situations of former ulcers were indicated merely by the depression of portions of the intestinal mucous membrane below the level of the adjacent parts. The mucous membrane around the ulcers in these several stages

exhibited various degrees of inflammation, and near those which had already healed, it was corrugated and contracted. Lastly, in the case fatal on the thirtieth day, the solitary glands of the cœcum and colon were enlarged, and displayed the usual yellow sloughs in the seat of some of the glands in the cœcum, and small oval ulcers in the ascending and transverse colon. The aggregate glands in the ileum, though enlarged, and, in some instances, having isolated portions inflamed and ulcerated, were not extensively diseased; and these changes were less marked in the immediate neighbourhood of the ileo-cœcal valve than some inches higher up the canal.

In three of these cases, the peritoneum was more or less inflamed in the chief seats of disease; and in that fatal on the twenty-seventh day, there were small nodular concretions of lymph on the surfaces corresponding to the seats of the internal ulcers, with a peculiar blueness or blackness of the membranes. The mesenteric glands were uniformly more or less swollen, and redder and softer than natural, and these changes were more decided in the cases which presented aggravated intestinal disease. They were chiefly found in the vicinity of the parts where the ulcers existed, and especially in the ileo-cœcal meso-colon. The spleen was large, and in the cases which proved fatal in the typhoid state, was softened so as to be readily broken down into a pultaceous matter. The liver and kidneys were engorged, and the gall-bladder filled with pale coloured bile. The heart was flaccid, and the blood in its cavities, and indeed in the body generally, either entirely fluid or imperfectly coagulated.

In the first case, of which the condition of the alimentary canal has been described, the only appearance of pulmonary disease, consisted in some increased redness of the bronchial mucous membrane, and the presence of an unusual amount of mucous in the tubes, with some engorgement of the posterior



and inferior regions of the lungs. In the second case, the lungs were healthy. In the third, which, it will be remembered, proved fatal from secondary disease supervening during convalescence, though severe bronchitis had previously existed, there was found after death no other appearance of disease than slight lobular condensation in the right lung. In the fourth case, there existed that inflated condition of the lung, usually found in cases of capillary bronchitis, with much secretion in the tubes, reddening of the mucous membrane, especially of the smaller tubes, and some lobular condensation and general engorgement of the lungs posteriorly. The bronchial glands were also enlarged and softened. The epiglottis was ulcerated at its edges, and the mucous membrane of the tonsils, fauces, epiglottis and upper part of the larynx, somewhat reddened, and covered by a layer of recent lymph.

The brain was only examined in the first and fourth cases. In the former, the fluid in the subarachnoidal cellular tissue and in the ventricles was in unusually large quantity. There was some thickening and opacity of the membranes on the hemispheres, and old adhesions at the longitudinal fissure, and the brain was somewhat engorged. In the fourth case, the brain displayed no appearance of disease.

Of the four cases, in the last only, was any eruption observed on the skin, and in that a few acuminate pimples appeared on the abdomen on the sixth day from admission, and about the twentieth of the disease, and remained for two or three days.

Notwithstanding the very threatening appearance of the cases of remittent fever, and the extreme prostration of strength following the relapses, every case terminated favourably, and but one death occurred from the low form of continued fever with hepatic disorder. In this case, the patient, a female 57 years of age, was a nurse in the hospital, and suffered from



almost incessant vomiting, at first of matters of the ordinary bilious character, and subsequently of a dark fluid like coffee-grounds. There was great prostration of strength at an early period, with jaundice, tenderness on pressure in the epigastrium and in the right hypochondrium, and inflation of the abdomen. After a few days cerebral symptoms supervened, she was convulsed, and died comatose, on the ninth day from the commencement of her illness. As this was the only fatal case of this form of fever, it is to be regretted that permission to examine the body could not be obtained.

The combination of rheumatic symptoms with the low gastro-enteric and remittent fever, was not, so far as my observation serves, unfavourable in its result, all the cases of this form of affection, though in several attended with alarming symptoms, active delirium and general depression of power, having recovered.

On referring to the Reports of the Registrar-general, I find that the deaths from rheumatism, during the period of prevalence of influenza, exceeded considerably the average of the previous six years. In the weeks ending November the 6th, 13th, 20th, and 27th, and December the 4th, 11th, 18th, and 25th, the deaths registered under this head were, 6, 9, 6, 7, 6, 7, and 5 respectively, while the weekly average for the quarter amounts to only 4.1. It may be inferred, therefore, that this form of affection had not always so fortunate a result as in the comparatively few cases under treatment in the hospital. The Reports also do not show any material increase in the deaths from pericarditis during the period of the epidemic; but as that disease when it occurred, was usually combined with some of the then prevalent pulmonary affections, the fatal cases may probably have been frequently registered as deaths from one or other of those more obvious forms of disease.

## REVIEW OF THE TREATMENT ADOPTED IN THE DIFFERENT FORMS OF THE EPIDEMIC.

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### I. TREATMENT OF THE CASES OF SIMPLE CATARRHAL FEVER.

Of the method of treatment pursued in the cases of simple catarrhal fever, it is not necessary to say much. The patient was usually directed to be confined to the room or bed, to take some form of antimonial or diaphoretic medicine, to use the foot-bath, and to restrain himself to a low diet. At the end of a day or two, according to the urgency of the symptoms, a more nutritious diet was allowed, and some form of tonic, or slight stimulant medicine, with anodynes and expectorants, was prescribed. Under this treatment, the attack commonly passed off readily, with more or less decided diaphoresis. If, however, at the commencement of the complaint, the chest-symptoms were of a more urgent character, the cough being hard and painful, and the breathing much affected, an emetic of the potassio-tartrate of antimony and ipecacuan, followed by a full dose of opium, or by a diaphoretic, consisting of Dover's powder and nitrate of potash, not unfrequently arrested the severe symptoms, and the disease pursued a mild course. When the attack was succeeded by rheumatic pains, small doses of colchicum were usually prescribed in combination with a tonic remedy, quinine being especially given when the pains assumed a periodic character.

On the whole, the treatment adopted was similar to that

which would be enjoined in a case of severe catarrh, with this difference, however, that tonics and stimulants were employed more freely, and at an earlier period, than would in simple catarrh have been either necessary or desirable.

## II. TREATMENT OF THE CASES OF INFLUENZA WITH PULMONARY COMPLICATION.

*Of the cases complicated with acute capillary bronchitis.*  
—Of eleven cases of this form of affection, which fell under my observation, in which the disease was, so far as is known, free from any serious organic complication, two only were bled from the arm, and in both of these, the depletion was practised before they came under my care. In one of these cases, the patient, a girl 5 years of age, was bled to about 7 ounces on the second day of the disease, and with considerable temporary relief; but as the difficulty of breathing and feverish symptoms returned shortly after, the bleeding was repeated to nearly the same extent the following morning. In the other case, a delicate young woman, 20 years of age, who had for some time suffered from suppression of the catamenia and a chronic cough, was freely bled on the third day of the disease. In each instance, the general depletion was accompanied with, or preceded by, the exhibition of contro-stimulant remedies, such as calomel and opium, and antimony. The depression occasioned by the loss of blood, was extreme, and the free employment of stimulants was shortly after had recourse to, but without success. The prostration of strength increased, symptoms of asphyxia were rapidly induced, and death ensued; in the first case, on the second day after the bleeding, and the fifth from seizure; and in the other, on the sixth day after bleeding, and the ninth from the commencement of the symp-

toms ; periods earlier than those at which any of the other cases proved fatal.

Local depletion, by cupping, was had recourse to in five cases. In four of these, the operation was only once practised ; but in the fifth, it was twice resorted to. The patients, in three of these cases, were cupped in the early stage of the disease. In one, a male, 36 years of age, in whom the disease commenced in the hospital, while he was under treatment for hemiplegia, the cupping was practised on the first day of serious illness, after slight indisposition of a week or ten days' duration, and when decided crepitation was already extensively audible in the posterior regions of both lungs. In the second case, the patient, a delicate female of 19, who laboured under disease of the hip, was also seized in the hospital, and was cupped on the second day of her illness, some crepitation being at the time audible in each dorsal region. The third case was that of a female, 25 years of age, some months previously under treatment for a bronchial affection, from which, though there was reason to suspect the presence of tubercle, she had almost entirely recovered. In the latter instance, the acute symptoms had come on two or three days before the cupping was resorted to, and, at the time it was practised, there was evidence of extensive effusion. In these cases, the operation was performed between the shoulders, and the blood abstracted, was 12, 10, and 8 ounces respectively. Calomel and opium was in each instance given, and persevered with, till the gums became slightly affected. In the second case, an antimonial emetic had been given the day previous to the cupping ; and in the other two, that operation was followed by the free exhibition of antimonials. But in the first case only, was their employment persevered in, the sickness in the second and third cases, compelling the dose to be immediately diminished,

and the remedy to be entirely suspended on the second day after the cupping. In each of these cases, the result was favourable, and the relief obtained after depletion very obvious, the disease having made no further progress, though, in the two latter cases, diffusible stimulants required to be subsequently given.

In two other instances, cupping was had recourse to at the later periods of the disease. In one of these, the nurse, a person 50 years of age, 12 ounces of blood was taken from between the shoulders, on the eighth day from the commencement of the symptoms: her attack having been ushered in with vomiting, jaundice, and much depression of strength. The immediate effect of the cupping was to afford great relief to the difficulty of breathing and cough. Two days later, however, the symptoms became urgent, and the local bleeding was repeated to 5 ounces, but without any material advantage, and she sank on the twelfth day of the disease. The coincident treatment in this case, consisted in the exhibition of emetics, as antimony and ipecacuan in the first instance, and, subsequently, of sulphate of zinc and ipecacuan, with expectorants, anodynes, and diffusible stimulants. In the other case, that of a female, 19 years of age, 4 ounces of blood were extracted by cupping, on the twenty-fourth day from the commencement of the attack. At the invasion of the disease, the depression of strength had been great; but at a later period, the symptoms assumed a more sthenic character, and induced the stimulating course of treatment first adopted to be discontinued; antimonials, with calomel and opium, were exhibited, and under these the patient recovered, after a very prolonged illness. In another case of acute capillary bronchitis, supervening on phthisis, and in one of the sub-acute form of the disease, cupping was also employed; in the acute case, without any beneficial effect, but in the other, with decided advantage.

Besides cupping, the remedies resorted to were, calomel with opium, or Dover's powder, which were exhibited so as slightly to affect the mouth, in five out of the nine cases. In some instances, 2 or 4 grains of calomel, with 1 grain of opium, were given immediately after the cupping, and repeated once or twice a day: in others, smaller doses of opium, as one-third or one-quarter of a grain, were given with the calomel at shorter intervals. Of the cases in which this treatment was followed, one proved fatal, but in this instance, the specific action of the mercury was not developed. A sixth case also terminated fatally, where one dose only of calomel and Dover's powder had been taken.

Antimonial remedies were given in seven cases, but in one, only for a few hours at the first admission of the patient. In four cases, they were combined with cupping, and in all but two, their use was followed by that of diffusible stimulants. In five cases, some form of mercurial was given with them, and in one only, was a purely antimonial treatment employed. Of those cases in which antimonials were given, only one proved fatal, and that was the female of 20 years of age, who was bled previous to admission. The doses of the antimonial varied from one-eighth to one-quarter or half a grain of the potassio tartrate, every hour, or every two or three hours. Emetics of ipecacuan, with 1 grain or half a grain of antimony, were given once or oftener, in several of these cases, at the commencement of the disease; and at a later stage, and in cases which did not allow of the more depressing preparation, emetics of sulphate of zinc and ipecacuan were given with advantage.

In most of these cases, anodynes, expectorants, anti-spasmodics and diffusible stimulants, such as the compound tincture of camphor, or hyoseyamus, Dover's powder and camphor, ipecacuan or squills; the sesqui-carbonate or aromatic spirits



of ammonia; the compound sulphuric æther, and the alcoholic or ætherial tincture of lobelia, and brandy, with the infusion or decoction of bark, were given in the later stages; and in three cases, where depression was from the first very great, these remedies were persisted in throughout, though only one of the three reached a favourable termination. Counter irritants, consisting of blisters and mustard cataplasms, were employed in all cases, and were generally several times repeated.

The great tendency of inflammation in any portion of the bronchial mucous membrane to become diffused over the whole of the lungs, and the general obstruction to the circulation which results, renders it most important that a correct view should be early taken of the nature of the affection, and an appropriate system of treatment speedily adopted. The experience which I have had of this form of pulmonary disease, both recently, in its epidemic shape, and previously, as a sporadic affection, justifies I think the conclusion, that it may, in a large proportion of cases, be entirely arrested, if appropriately treated in the early stage. At this period, effusion has taken place only to a limited extent, and the disease is merely indicated by a slight roughness or harshness of the respiratory sounds in the posterior regions of the lungs, with fine crepitation at their bases, and sibilant rhonchus in other parts, on forced inspiration. If, however, the first signs of pulmonary disorder be misconceived or neglected, and the disease be allowed to proceed to extensive effusion in the smaller bronchial tubes, before an efficient course of treatment is pursued, it becomes almost necessarily and unavoidably fatal. The results of the cases of acute capillary bronchitis occurring in Influenza, but uncomplicated with any serious organic disease, fully confirm this opinion. Of seven cases of the affection under treatment, from the commencement of the

attack, one only proved fatal, and in this instance, for various reasons, the affection was most unfavourable for treatment, while in the two other cases, admitted after the disease had reached the second stage, the attacks terminated fatally.

The cases of acute capillary bronchitis in which general depletion was had recourse to, though only two in number, are unfavourable to the employment of that remedy in the treatment of the disease, at least when it occurs as a complication of the epidemic catarrhal fever; and the inference is confirmed by the experience of most judicious practitioners of the inutility, if not positively injurious effect, of general bleeding in the severe pulmonary complications of the various epidemics of Influenza. In sporadic cases of the disease in persons of robust habit, I have known decided benefit arise from the cautious employment of general bleeding; but when the disease occurs in an epidemic form, it usually attacks persons reduced by previous destitution and exposure, by organic affections of the lungs, or, by serious disease in other parts of the system, circumstances under which general depletion is clearly undesirable. The severe pain in the chest which some of the cases present at their commencement, would at first sight, appear to call for active treatment; but experience teaches that this symptom very generally yields in a few hours to the employment of the mild remedies. In none of the cases, in fact, which were under my care from the commencement of the attack, did I see cause to order general bleeding, or subsequently regret, that it had not been adopted. The appearances of acute inflammation which often accompany an attack of Influenza, are indeed, more frequently fictitious than real, and the active febrile symptoms soon give place to symptoms of depression. When, indeed, we bear in mind the necessary course of this disease, if not entirely arrested by the treatment pursued; the general diffusion of the inflammation

throughout the bronchial membrane; the peculiar character of the secretion which is exuded; and the prostration of strength which necessarily results from such general obstruction in the bronchial tubes, we cannot but perceive the expediency of employing measures capable of subduing the local disease without too much depressing the powers of the system: indications which certainly point rather to the employment of local than general bleeding.

Of the modes of local depletion, I consider that by cupping decidedly preferable to the application of leeches. After the period of infancy, leeches are of little use for the relief of active pulmonary inflammation. Their application also is very fatiguing to the patient, and the slow bleeding which is generally kept up, reduces the strength without having a proportionate effect on the local disease. By cupping, on the contrary, we may attain many of the advantages of general bleeding, with less risk of undue depression, while the amount of blood to be abstracted may be exactly adapted to the severity of the disease, and the strength of the patient. In the cases in question, I prefer the application of the scarificator between the shoulders, as in that situation the bleeding immediately relieves the affected part, and the change produced is often so rapidly manifested, that it affords a ready indication of the extent to which the depletion should be carried. After the local or general abstraction of blood, the exhibition of a full dose of opium becomes very beneficial, and proved peculiarly so, in the pulmonary complications of the recent Influenza, quieting the general disturbance of the nervous system, which was not unfrequently a predominant feature, and, in some instances, procuring comfortable sleep, from which the patient awoke almost freed from the local disease. Where time is of so much importance, as in these cases, it would also be well to combine with the opium a few grains of some preparation of

mercury, and to continue the employment of the remedy till some slight affection of the gums is induced. As, however, in the earlier periods of all forms of inflammation of the pulmonary tissue, antimonial medicines appear more effectual than mercury, I would commence the treatment of cases of acute capillary bronchitis by the exhibition of an antimonial emetic; and so long as the strength of the patient permitted, and the local inflammation required it, would continue the use of antimony, either as an occasional emetic, or in smaller doses, more frequently repeated, as a nauseant. I am inclined to believe that while in the sthenic form of pneumonia, the frequent repetition of small doses of antimony, so as to keep up continued nausea, is the most efficacious mode of employing that medicine; in capillary bronchitis, in which there is so great a tendency to depression of strength, the occasional administration of emetics is preferable, and that the use of antimony in this latter mode, may be continued when its constant nauseating operation could not be borne by the patient. While this treatment is in progress, it is desirable that counter irritation should also be employed, and a blister so placed between the shoulders as not to interfere with the ready adoption of change of posture by the patient, will best accomplish this purpose. I have usually been in the habit of directing, as recommended by Dr. Stokes, that the blister should be removed at the end of five or six hours, and a warm cataplasm applied on the part, in order that vesication may rapidly take place, with little suffering to the patient, and the blistered surface quickly heal.

In the second stage of the disease, when crepitation is extensively audible over different parts of the lungs, the prospect of recovery becomes small, and the available means are necessarily very limited. The depression of strength precludes the employment of antimonials; but an attempt may still be

made to get rid of the redundant secretion from the bronchial tubes, by the exhibition of emetics ; and this seems effected, with the least exhaustion to the patient, by the combination of sulphate of zinc with ipecacuan. The immediate result of the free operation of the emetic, is usually considerable relief to the difficulty of breathing, even when the patient may be at the same time so exhausted as to require stimulants. A considerable quantity of viscid tenacious mucous is commonly expectorated, the breathing becomes freer, and the patient's strength proportionately rallies. The amendment, however, is often only temporary, and with each repetition, the emetic is less and less effective. In the second and third stages of the disease, the remedies to be employed in conjunction with the emetics, or in cases where emetics cannot be exhibited, are anti-spasmodics, stimulants, expectorants and anodynes. The sesqui-carbonate or the aromatic spirit of ammonia, according to the degree of prostration of strength, æther, lobelia, ipecacuan or squills, camphor, morphia, conium, and hyosei-amus, with senega or serpentary ; counter-irritants, as blisters to the chest, or sinapisms to the abdomen and lower extremities, may also be employed ; the strength must be supported by animal broths and jellies ; and wine, brandy, or other form of stimulant, be administered. The effect of these remedies, as remarked by Dr. Stokes, greatly depends on the previous course of treatment. When the patient has been neglected in the early stage, or when the depression of strength precludes from the first the employment of depletion, the stimulating treatment is usually of little efficacy ; but when reducing measures are early resorted to, the subsequent exhibition of stimulants has generally a most favourable influence on the successful issue of the case.

In the period of convalescence, when much prostration of strength, difficulty of breathing, cough and expectoration still



continued, great benefit was derived from a combination of tonic and astringent remedies, such as the sulphates of quinine, iron or zinc, with anodynes and expectorants. When the expectoration was copious, and of a thin, spumous character, the sulphate of zinc was particularly beneficial; but when, on the contrary, the sputum was very viscid, and assumed either the muco-purulent or the glairy form, to which Lacennec has applied the term "vitreous expectoration," the greatest advantage was derived from the combination of expectorants and anodynes with alkalis, as the liquor potassæ, the bicarbonate of potash, and the sesqui-carbonate of soda.

The difficulty of breathing, which often continued for some time after convalescence was established, and was liable to sudden exacerbation from the slightest exposure, was generally much relieved by the alcoholic or ætherial tincture of lobelia, either alone or in combination with anodynes, as the hyosciamus or morphia. When administered in such a dose as to produce slight nausea, it seldom failed to allay at once the asthmatic paroxysm.

In the advanced periods of convalescence, when the more decided counter-irritants were no longer required, the use of the liniment of acetic acid and oil of turpentine, recommended by Dr. Stokes, was frequently resorted to, and with decided advantage, in dissipating the flying pains in the chest, so frequently experienced.

2. *Of Pneumonia as a complication of Influenza.*—In the cases of pneumonia which occurred as a complication of Influenza, depletion was practised in only one case, in which, though the patient was much prostrated, and exhibited great torpor of mind, 8 ounces of blood were abstracted by cupping between the shoulders on the eighth day from the commencement of the symptoms. The bleeding was followed by a full opiate with calomel, and nauseating doses of anti-



mony were given as long as the patient's strength admitted ; the calomel being continued till slight salivation was produced : subsequently stimulants were had recourse to. In two other cases, emetics of antimony were first given, and nauseating doses repeated at intervals ; and in a third, small doses of antimony were employed from the first. In one other case only, that in which a circumscribed pleurisy supervened on the pneumonia, was any form of mercurial prescribed ; and then small doses of mercury with chalk were given for a secondary disease, and for the relief of a diarrhœa. In two patients, one of whom was jaundiced, the treatment was throughout of a stimulant and expectorant character ; and in all others, diffusible stimulants, anti-spasmodics and anodynes, were given in the later stages, a nutritious diet being at the same time ordered. Counter irritation, by blisters and sinapisms, was employed in all cases.

In one of the cases in which a relapse occurred, there being symptoms of increased inflammation of the lungs, small doses of antimony were again prescribed, and continued till the attack subsided ; after which the dilute sulphuric acid, with compound tincture of bark, was administered. In the other, the relapse being attended by extreme prostration of strength, profuse perspirations, diarrhœa, jaundice, and rheumatic pains, the acetate of lead and opium, and small doses of colchicum in combination with ammonia and bark, were given.

A review of the treatment pursued in this form of the disease, and of the success which attended its employment, for the only case which proved fatal, was not sufficiently long in the hospital to be subjected to any specific treatment, fully supports the assertion already made, that the pneumonic complication of Influenza during the late epidemic, was by no means so serious, as the cases in which the local disease assumed the form of capillary bronchitis. The facts, though too few in number to

be regarded as conclusive, tend nevertheless to show, that this form of inflammation of the lungs, is mostly a very tractable disease; a remark previously made by M. Lassere, when describing an epidemic of a similar kind, observed by him in one of the Parisian hospitals, and of which he has published an account, under the name of Catarrhal or Broncho pneumonia.

### III. TREATMENT OF THE CASES OF EPIDEMIC CATARRHAL FEVER WITH ABDOMINAL COMPLICATION.

1. *Of the continued fever with intestinal disorder.*—These cases were most generally treated on a mild expectant plan.

When there was much heat, or dryness of the skin, a saline mixture, containing a small proportion of antimony with nitrate of potash, sweet spirits of nitre, and hyosciamus, was ordinarily given, and a mild aperient ordered, if the bowels were confined. A dose of Dover's powder was frequently prescribed at night, and a low diet enforced. After an interval of two or three days, a slight tonic, consisting of some form of vegetable bitter, was usually given, and more nutritious food allowed. When the febrile symptoms were early very active, great relief was often obtained by wrapping the patient for half-an-hour or an hour in a blanket, wrung out of hot water; and the relaxation of the feverish excitement by this means was often remarkable. Where, on the other hand, from the first, there was more depression of strength, the chlorate of potash with hydrochloric acid, or the decoction or tincture of bark, with the dilute sulphuric or nitric acids, were given, and when diarrhœa existed with inflation or tenderness of the abdomen, the hydrargyrum eum eretâ, with the compound ipecacuan powder, was prescribed occasionally during the day, and the abdomen covered with emollient, and slightly stimulating

cataplasms, &c. When there was much prostration and general torpor, the sesquicarbonate of ammonia with infusion of serpentary, or the aromatic spirits of ammonia, and compound sulphuric æther, with wine or brandy, were given. If more urgent diarrhœa occurred, and the weakness of the patient was greater, especially if there was blood in the evacuations, the acetate of lead and opium was most generally employed. In the cases in which cerebral symptoms predominated, ice was usually applied, and the head shaved. When there was much torpor of mind, and a comatose tendency, the greatest advantage resulted from the application of blisters to the nape of the neck, temples or scalp. If, after the symptoms of febrile excitement had materially declined, the patient continued much excited and delirious, and restlessness and inability to sleep were kept up by mere irritability; a small dose of anodyne, generally the quarter of a grain of the hydrochlorate of morphia, with some kind of diffusible stimulant, taken at night, usually procured refreshing sleep, and accelerated the convalescence. In these cases, especially when the excitement or pains in the head increased towards evening, quinine was also given during the day.

2. *Of the remittent form of Fever.*—In the fever which assumed more or less of a remittent character, or in which, after advanced convalescence, severe relapses occurred, the sulphate of quinine, with the compound tincture, or decoction of bark, were freely employed. As soon as the remittent character began to manifest itself, the quinine was commenced in doses of two or three grains, three or four times daily. The usual effect of this treatment, was to defer the periodic time, moderate the violence of each successive paroxysm, and lessen the subsequent prostration of strength, till, after a few days, the fits entirely ceased. Where the intermittent character was however very decided, a larger dose of quinine, as five or six

grains, was occasionally exhibited, immediately the symptoms of a returning paroxysm appeared, which either entirely arrested the fit, or materially shortened the duration, and lessened the degree of after prostration. In all these cases, stimulants, such as ammonia, wine, or brandy, were freely administered.

For the suppression of vomiting, when it existed to a troublesome degree, the hydrocyanic acid with morphia, was given in combination with an effervescent medicine, and small doses of brandy. When the vomiting appeared to be connected with an inflammatory condition of the mucous membrane of the stomach, iced soda water, with hydrocyanic acid, and morphia, were ordered, and a few leeches or a blister were applied to the epigastrium.

In the cases in which there was more or less decided jaundice, with pain, or sense of weight and tenderness, on the right hypochondrium, stimulating cataplasms, blisters, leeches, or cupping, were had recourse to, and mild mercurials, as mercury with chalk, or calomel and opium, cautiously given. When the paroxysms or relapses were followed by profuse perspirations, the mineral acids with bark, were found particularly useful.

3. *Of the low Rheumatic Fever.*—In the rheumatic form of the epidemic, and especially where there were symptoms of rheumatic affection of the pericranium or meninges of the brain, such as distressing pain in the head, chiefly experienced or greatly aggravated at night, with great restlessness or inability to sleep, and nocturnal or continuous delirium, the most rapid and decided amendment followed the exhibition of colchicum. The preparation used was the tincture of the seeds, which was mostly given in doses of not more than four or five minims, repeated every three, four, or six hours. It was almost invariably combined with ammonia and opium; stimulants or tonics, such as wine or brandy, bark, or quinine, being usually administered at the same time,

or later in the attack. In two instances, in which, at an early period of the disease, the restlessness, pain in the head and delirium were especially marked, and there co-existed much general excitement, leeches were applied to the temples: but in one case, that of a stout smith, 22 years of age, the trifling loss of blood produced very great prostration of strength, without any alleviation of the local symptoms. The depletion was not more useful in the other case; and full doses of anodyne, such as half a grain or a grain of the hydrochlorate of morphia, when given alone, were equally inefficacious. After the continuance for a few hours of the small doses of colchicum, however, the exhibition of an anodyne, in combination with diffusible stimulus, was usually followed by a calm and refreshing sleep, from which the patient awoke free from the pain in the head, perfectly collected and intelligent, and in all respects better. When the colchicum earlier in the disease was given in larger doses, its specific action on the stomach and bowels was manifested; but when exhibited in small doses, and in combination with ammonia and opium, no obvious effect attended its use, and its operation was indicated simply by the gradual disappearance of the rheumatic pains, and the ready occurrence of sleep on the exhibition of anodynes, which had previously entirely failed to procure rest. In two or three cases, a remarkable decrease in the frequency of the pulse was observed in patients who were taking colchicum in this way, and probably resulted from the action of the remedy. In several others, diarrhœa with some discharge of blood by stool, was present at the time the colchicum was first employed; but its exhibition in the form described, prevented any unpleasant effect, and the use at the same time of acetate of lead and opium, readily repressed the undue action of the bowels. Where there existed not only diarrhœa but profuse perspirations, the acetate of lead was combined with a large excess of



acetic acid, as well as with opium, and apparently with advantage. In the cases in which cardiac murmurs were audible, the colchicum was prescribed with some form of mercurial, and an opiate, as the mercury with chalk or calomel with Dover's powder or opium ; and in one instance, where there was much pain referred to the region of the heart, a small cupping was practised in the præcordia.

When either in this, or in other forms of the epidemic, the rheumatic symptoms continued to harass the patient during convalescence, the best effects were experienced from the internal use of small doses of colchicum, iodide of potassium, and opium, separately, or in combination, and from the employment of stimulating and anodyne liniments externally. The most useful external application which I have tried, is a combination, in about equal proportions, of the strong tincture of aconite, prepared according to the formula of Dr. Fleming, with the compound camphor and soap liniments. The remedy requires to be rubbed in for a sufficient length of time, to produce a strong biting or tingling sensation in the skin, which is succeeded by a general numbness of the surface, that materially alleviates the pain. After having been a few times employed, the proportion of the aconite may be increased to one-half, or two-thirds.

In the pulmonary complications of the several febrile diseases prevalent during the epidemic of Influenza, the treatment pursued was very similar to that of the cases in which bronchitis or pneumonia were predominant, modified, of course, by the general state of the patient. In some cases, cupping to a small amount was practised between the shoulders, and blisters were repeatedly applied, either in the same region, or on the front of the chest. Emetics, expectorants, and anodynes, were also variously prescribed.

In all these forms of disease, the free exhibition of tonic



and stimulant remedies was required early in the attack ; the convalescence was usually very protracted ; and the debility, that remarkable feature of all the forms of Influenza, was long continued, and demanded careful medical and dietetic treatment.

In conclusion, it may be remarked, that the abdominal forms of the Epidemic Catarrhal Fever, though in several respects peculiar, and requiring a distinct mode of treatment, were yet not so dissimilar from forms of disease which we ordinarily see, as to require further details. The indications were, to subdue the disorder of the alimentary mucous membrane and liver ; to relieve the rheumatic symptoms ; to guard against relapses or repetitions of the paroxysms, and to support the strength of the patient. For the accomplishment of these objects, the means employed were such as are generally had recourse to, modified, however, by the peculiarly asthenic character of the epidemic, which precluded a resort to reducing measures, and called for the use of stimulants and tonics at an earlier period, and to a more liberal extent, than is either necessary or desirable in the fevers of ordinary seasons.

In the typhoid cases, when the true character of the epidemic became more apparent, stimulants were frequently given, even while the pulse continued firm, the skin hot and dry, and the tongue moist. In no instance, however, had I cause to regret having prescribed them, or to believe that I had been too inactive in the employment of reducing measures.

## REMARKS ON THE NATURE AND CAUSES OF THE EPIDEMIC.

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The practical object of this work, and the length to which it has already extended, preclude me from entering very fully into the nature and causes of the epidemic. As, however, the several varieties of disease co-existent with it have been described by me as essentially connected with it, and as my views on this point may be open to the objection of classifying together affections of very dissimilar character and very unequal importance, I shall endeavour briefly to explain the reasons which have led me to these conclusions, and the grounds on which their validity may be supported.

I. Though the catarrhal form was undoubtedly that most characteristic of the recent epidemic, there were various contemporaneous affections, of such frequent occurrence, and of so peculiar a character, as, on the most superficial view, to suggest that the connexion between them and the more typical forms of the epidemic was other than accidental.

By reference to the reports of the mortality of the metropolis, it has previously been shown, that when towards the end of November, the total number of deaths registered, became much larger than usual, the increased mortality was scarcely greater from pulmonary diseases, than from typhus, remittent fever, erysipelas, rheumatism, &c. If it be true, that in some cases the pulmonary mucous membrane was almost the sole seat of

disorder, and that in others the abdominal organs were the leading parts involved, still, so far as my observation extended, these cases were comparatively few in number, and trivial in their nature, while in all those of any severity, both the pulmonary and abdominal organs were implicated. The disease, in fact, passed by such insensible gradations from one typical form to the other, that there were repeatedly under my care, in the wards of the hospital, cases presenting in turn every separate feature, from those in which the lungs were chiefly affected, to those wearing all the characteristic symptoms of fever, with gastro-enteric and hepatic disorder. Even recently, while engaged in compiling this work from the written notes of the cases, so closely, in some instances, did the symptoms during life, and the morbid appearances after death, approximate, that I repeatedly hesitated as to the class of affection to which they should severally be referred. The cases also, where the patients when attacked, were under treatment in the hospital for other complaints, and in which, therefore, the same exciting cause must have been to a great extent operative, partook of no less variety than those which were admitted from different and distant localities. In one, the lungs were almost exclusively affected ; in a second, the disease commenced with symptoms indicating affection of the respiratory organs, and, subsequently, put on the appearance of low fever, with gastro-enteric disorder ; a third was ushered in with bilious vomiting, jaundice, pain in the region of the liver, and general prostration, and afterwards, with the development of acute bronchial inflammation, assumed a more sthenic type ; while in a fourth, gastro-enteric and hepatic disorder predominated throughout.

The close analogy perceptible amid the variations of the individual cases, is, however, a feature not confined to the recent Influenza. The records of former visitations clearly indicate, that in them also the coincidence of the pulmonary

with the various other affections referred to, was not less frequent. So common indeed has been the combination of the epidemic with enteric disorder, that Dr. Hancock\* remarks : “ it is scarcely possible to look over the histories of Influenza, without perceiving a connexion between this disease and morbid affections of the mucous membrane of the stomach and intestines.” Dr. Hooper, also, in a small treatise on the epidemic of 1803, which I have only recently met with, suggests a classification of the several forms of the malady, very similar, in some respects, to mine.

In his account of the Influenza of 1837, Dr. Clendinning† mentions the occasional appearance of disorder of the stomach and bowels, in that epidemic, and the typhoid character which the fever occasionally assumed ; and Dr. Macleod,‡ among other complications, enumerates erysipelas and otitis, as often observed. The account of the same epidemic, published in the *Provincial Medical Transactions*,§ from the reports of competent observers in every part of the kingdom, affords additional evidence of the general similarity of its different forms to those prevalent during the recent visitation. In some localities, particular notice is taken of the occurrence of vomiting, diarrhœa, dysentery, and neuralgic and rheumatic complications ; and Dr. Copland|| describes all these as present in the epidemics of 1833 and 1837. In the various communications to the journals, in relation to the epidemic of 1803,¶ the frequency of gastro-enteric and hepatic disorder, and of rheumatism, are referred to, as also the typhoid and remittent

\* Cyclopædia of Practical Medicine, art. Influenza, vol. ii.

† London Medical Gazette, vol. xix. p. 781.

‡ Ibid. p. 784.

§ Vol. vi.

|| Dict. of Practical Medicine, art. Influenza.

¶ Med. and Phys. Journal, vols. ix. and x. Pearson on the Epidemic Catarrhal Fever of 1803.

character which the fever sometimes assumed. The epidemic of 1782\* possessed similar features; and it is stated that miliary and herpetic eruptions about the mouth, or over the whole body, with a tendency to profuse perspirations, and hæmorrhage from the mucous membranes, were of frequent occurrence. Dr. Fothergill, Dr. Heberden, and other writers,† describe the epidemic of 1775, as often attended with diarrhœa, especially towards its close; and Dr. Haygarth reports having seen the disease assume the form of low fever. The epidemic of 1762,‡ which broke out in April, and to which succeeded the appearance of dysentery in July, was itself, in some instances, and in some localities, complicated with bilious and dysenteric affections, and with fever of a remittent character. The catarrhal fever which ravaged Scotland in 1758,§ on the other hand, followed great prevalence of diarrhœa, and dysentery, and was at times attended with bilious vomiting, diarrhœa, and hæmorrhage from the mucous membranes. Similar evidence of the almost constant connexion of Influenza with abdominal affections, and of the prevalence of such affections before, during, or after visitations of that disease, will be found in reference to the epidemics of 1742, 1737, 1733, and 1729, and indeed of all those recorded to have visited Europe. In several of the very early accounts, the epidemic is stated to have preceded or followed the raging of malignant fevers; and it is highly interesting, and not beside our purpose, to remark the coincidence between the Influenza of May 1831, and the outbreak of the epidemic cholera in the north of England in

\* Hamilton, Mem. of Lon. Med. Soc., vol. ii. 1794. Gray, Med. Com., vol. i. Med. Transac., 1785, vol. iii.

† Fothergill's Works, by Lettsom, 4to, 1784, p. 615, and Med. Obs. and Enq., vol. vi. p. 340.

‡ Baker, De Catarrho et Dysenteria Londinensi, 1762. Watson, Phil. Trans., vol. lii. p. 647.

§ R. Whyte, Med. Obs. and Enq., vol. ii. 1764, p. 187.



the following November, and in London in the succeeding June ; as also of the reappearance of Influenza in April 1833, and of the cholera in the subsequent July, and the connexion which existed between the two diseases in other countries.

The preceding brief enumeration of some of the peculiar features of the epidemics of the last hundred and fifty years, has been derived from British authorities only ; but it would be as easy to show, from the works of continental writers, that the recent epidemic, and indeed all others, of which we possess accurate descriptions, presented in Germany, France, and Switzerland, in the extreme north and south of Europe, and in Asia and America, features very similar to those of the recent visitation. In proof of this assertion, I may appeal to an account of the recent epidemic, as it appeared in Geneva, by M. Marc d'Espine,\* who notices the frequency of various severe pulmonary disorders, and the prevalence of erysipelatous affections, cerebral congestions, otitis, neuralgic and rheumatic pains, and profuse perspirations with miliary eruptions, &c. He further states, that the epidemic of 1831, which he observed at Paris, and those of 1837, 1844, and 1848, which fell under his notice at Geneva, were essentially similar in their features. From the brief notice of the recent epidemic in the *Gazette Medicale*, it appears that the various forms which it assumed in Paris, were not less strikingly similar to those which it presented in this country. M. Toulmouche,† in an account of the epidemic of 1837, as it prevailed in the Maison Centrale de Detention, at Rennes, describes the disease to have assumed two distinct forms ; in the one of which, it affected chiefly the nasal passages, pharynx and larynx ; while in the other, it involved the respiratory and gastro-intestinal mucous membranes : and the details of his description are in every respect very similar to the results of my own observation. The re-

\* Gaz. Med. 1848.

† Ibid, 1847.



mark indeed of Dr. Holland,\* that "Sir G. Baker's narrative of the influenza of 1762, or Huxham's still earlier reports of the epidemics of 1733 and 1743, might be taken throughout as a description of those of 1833 and 1837," could also be extended to the more recent visitation : and I may add, that whether in reference to this epidemic, or to the various others which have prevailed, the features which the disease assumed in one locality, will be found to have almost equally characterized it in every other. The generic character of the disease being, in fact, in all seasons, climates and localities, essentially the same ; though of course its specific distinctions have varied with the epidemic, and the peculiar circumstances under which it has prevailed.

When, therefore, we consider the remarkable coincidence in the period of accession, general prevalence and decline of the several forms of pulmonary, enteric, hepatic and rheumatic affections ; the remittent and typhoid character of the febrile diseases ; the very common occurrence of symptoms referable to the stomach, intestines and liver, in the cases with predominant affection of the lungs, and of those of bronchitis and pneumonia in the abdominal form of the disease ; and when we further find that these symptoms were features not peculiar to the recent Influenza alone, but have also, in a greater or less degree, characterised all its former appearances, either in this or other countries ; we can scarcely refrain from acknowledging, that these several affections are not merely coetaneous, but correlative, and types and modifications of one disease, with which they have a common origin. Assuming this inference to be admitted, we may advance to the solution of the further question of what is the essential nature or proximate cause of the disease ?

Extensive and carefully conducted investigations of the

\* Medical Notes and Reflections, 1840, p. 195.

phenomena of fever, during life, and of the morbid appearances visible after death, in the bodies of persons who have fallen victims to that malady, have clearly established :—

1st, That though in certain localities and seasons, the solitary and aggregate glands of the intestine are very constantly diseased, yet, that in the fevers of other localities, and in other seasons, they are but rarely affected ; and, further, that when disease of the intestine is detected, it does not always bear a proportionate relation to the intensity of the symptoms during life.

2ndly, That evidences of true inflammatory action, in any organ, are by no means generally observable after death from fever ; which may have raged in such intensity as to destroy life, without leaving a trace of morbid action behind. The only change which may invariably be predicated of such cases, is an alteration in the qualities of the blood, by which it loses more or less of its power of coagulating.

3rdly, And, consequently, that decided evidences of morbid action, when found in the bodies of those who have died from fever, can only be regarded as accidental complications, affording no explanation of the essential nature of the disease. The only supposition, therefore, which is applicable to the explanation of the phenomena of fever, is that of a deleterious influence operating upon the nervous system, deranging all the vital powers, and so poisoning the blood as to excite a predisposition to local congestion or inflammation in different organs.

These views, if applicable to the phenomena of the more intense forms of febrile disease, no less apply to those of a slighter description.

In the epidemic catarrhal fever, the morbid influence is rarely, if ever, so intense as absolutely to destroy life ; death in persons affected by it, resulting from its combination with

previous disease, or from the development of some local complication: and the morbid appearances in Influenza are, consequently, more positive than in cases of true typhoid fever. Every phenomenon of the disease, however, points not less conclusively to the influence on the nervous system of some powerfully-depressing agent. The sudden seizure of a large proportion of cases; the entire prostration of strength from the very commencement, and to a degree altogether disproportioned to the amount of local disturbance; the symptoms of disorder of the cerebro-spinal system; and the extreme debility which so often succeeds to the simplest cases of the disease; can in no other way be so satisfactorily explained.

The very general affection of the respiratory mucous membrane, is, probably, due to the morbid cause, whatever it be, acting more specifically upon it; and we must conclude, that however apt this particular affection may be to run into inflammation, it is not, at its commencement, of an inflammatory character, but rather a peculiar kind of irritation. In one or two cases, it will be remembered, that while the accession of the disease was characterised by the usual evidences of depression, the superinduction of acute bronchial inflammation gave rise to a more sthenic class of symptoms, sufficiently indicative of the change. The regular course of accession and decline of the symptoms, in the simpler cases of Influenza, is likewise opposed to the supposition of the existence of any true inflammation of the bronchial mucous membrane.

To the question, what is the precise nature of the morbid influence on which the disease is dependent? it may be replied, that whatever be the occasional mode of its propagation, there is no doubt of its ordinary diffusion being due to poison of a telluric or atmospheric character. As proof of this may be mentioned, first, the almost simultaneous outbreak of the disease in places very widely apart, and having no immediate

communication with each other : the late epidemic, for instance, was generally prevalent in Edinburgh, London, Paris, and Geneva, at or about the same time, while parts of England, within a short distance of the metropolis, were either not attacked till a later period, or entirely escaped ; secondly, the seizure of a very large proportion of the population of a town, or district, within the course of a few hours, as was the case in the metropolis on the recent occasion ; thirdly, the sudden illness of individuals, or bodies of men, visiting a locality where Influenza is, or has been very recently prevailing, immediately on their arrival, and previous to direct intercourse with those labouring under the disease ; and, lastly, the frequent occurrence of epizootic diseases, at or about the period of a visitation of Influenza. These are all circumstances opposed to the notion of Influenza being dependent on infection, or contagion, as ordinarily understood, and seem to have their explanation alone on the theory of some generally-diffused poison.

The conditions under which epidemics of catarrhal fever have appeared, do not, however, support the notion of their depending on mere variations of degree in the ordinary atmospheric influences. The regular progress of most of the epidemics in a north-westerly direction, from India to America ; their appearance in all seasons, latitudes and climates, and under the most opposite varieties of temperature and humidity, constitute insuperable objections to this view. It may be true, that some of the visitations of the disease have concurred with very peculiar atmospheric conditions, as the prevalence of very dense fogs, an unusual degree of humidity, or great changes of temperature, from long continued warm weather, for instance, to sudden cold : but then again, the disease has appeared under circumstances totally different ; and in our own country, the like epidemics are recorded to have

prevailed at every period of the year, and under every variety of season. The accession of the recent epidemic, it will be remembered, was preceded by an unusually warm autumn, while, between the 15th and 19th of November, there was a fall of temperature, from 54 to 27 degrees. On the 20th, there was a dense fog, and the temperature again rose to 44·7 on the 21st, and to 49·2 on the 22nd: the disease at the latter date being in full vigour. The Influenza of 1837, followed a remarkable fall of temperature of 25 degrees, between the 22nd and 25th of December, 1836. On the 25th, there was a gale of wind from the north-north-east, and much snow fell; to which a sudden and general thaw succeeded on the 2nd of January, 1837. The Influenza appeared generally throughout the country, from the 7th to the 10th January. So far, therefore, as the weather was concerned, there was considerable similarity between the circumstances attending the two last epidemics. The Influenza of 1837 was remarkably general at or near the same period. In London, it was first noticed about the 7th of January; it was at its height on the 14th, still continued very prevalent on the 21st, and subsided after about six weeks. In Dublin, the disease prevailed during January and February; and in Scotland, it appeared previous to its outbreak in London. At St. Petersburg, Stockholm, Copenhagen, and Berlin, it appeared at the end of December, and was at its height in the middle of January; Munich and Vienna felt it somewhat later.\* At Paris, it made its first approaches in the middle of January, and prevailed during February. At Geneva, the first cases occurred in January, and the disease was at its height in the middle of February. At Lyons it did not show itself till after it had left Paris. In Lisbon, it was first noticed about the middle of February.

\* Holland's Notes and Reflections. Otto and Leitao, quoted in British and Foreign Medical Review, vol. v.



The disease was also epidemic at the Cape of Good Hope, in November, 1836, and at Sydney, in October, 1836.\*

It is remarkable, that the weather, in Europe, at or near the time of prevalence of the epidemic, of 1837, was unusually severe over a very wide extent of country; yet this cannot explain the occurrence of the disease, for in several places as, at Paris, Lyons, and Lisbon, it is stated that the epidemic did not break out till after the severity of the season had declined, and committed its ravages during mild and pleasant weather. The state of the weather also affords no explanation of the epidemic in the southern hemisphere, two or three months before.

The Influenza of 1833, commenced in the metropolis at the beginning of April, and was at its height in the week ending the 20th. It had begun to decline in that ending May 7th, and appears to have altogether subsided in the beginning of June. The winter preceding this epidemic was long, warm, and moist, and the spring cold, with very bleak winds. The epidemic of 1831, appeared towards the commencement of June, and was at its height about the 2nd of July. It did not subside before August. In the spring, the weather had been very variable, and afterwards cold during the night and warm in the day time. June and July were unusually warm and very moist. Influenza had prevailed in the China and Indian seas, at Manilla, Java, Penang, &c., in September, 1830.

The epidemic of 1803, began in the metropolis in the end of February, and continued during March. The weather, when the disease first commenced, was mild and damp, but by the end of March, it changed to keen and frosty. The Influenza of 1782, appeared in the middle of May, and was at its height from the 11th to the 25th of June. The spring

\* Medical Gazette, vol. xx.



had been remarkably cold and backward. Of the weather, prior to the epidemic of 1775, we have no full account, but the disease is stated to have commenced in November, and to have followed on a remarkably equable season. The epidemic of 1762, appeared at the beginning of April, towards the end of which it was general. The previous winter had been remarkably open, and there had been no frosts until spring. During the months of September and October, when the epidemic of 1758, was general in Edinburgh, the weather was warm and dry. The epidemic of 1743,\* appeared in Plymouth, towards the end of April; the month having commenced with warm weather and ended with cold. In Dublin, it prevailed in April and May. March and the beginning of April having been very cold. The Influenza of 1737, visited Dublin in October, and Plymouth in November; the previous September having been fine, and October being generally cool and fine. The epidemic of 1733, appeared at Plymouth in February, during warm and moist weather, and in Dublin in January and February; the month of January having been cloudy, wet, and unusually warm. That of 1729, appeared in Dublin in November. October had been cloudy and rainy.

From this enumeration it will be seen, that though the most frequent visitations of the disease have been in autumn, winter and spring, they have, nevertheless, happened in all seasons, and under every possible variety of temperature and humidity. Nor is the observation applicable merely to the disease as it has appeared in this country. M. Marc d'Espine in the account of the recent epidemic at Geneva, before referred to, after stating that that city had been visited by the disease about eight times in sixty years, or in the years 1788, 1803, 1820, 1831, 1834, 1837, 1844 and 1848, re-

\* Huxham de Aëre etc. Rutty, Chronological History of the Weather. 1770.

marks, that these several epidemics had run their course under the most different and opposite atmospheric conditions. The Influenza of 1848, began and continued during a season of constant drought and cold, those of 1844 and 1837, during moist and rainy weather, and the epidemic of 1831, again in a dry and cold period. The last epidemic commenced its ravages in December, that of 1844, in February, that of 1834, in January, and that of 1831, in July. The epidemics of 1820 and 1803, appeared in March, and that of 1788, in October. These circumstances, he regards as sufficiently conclusive against the dependence of the disease on the causes which give rise to common catarrhal affections ; and he justly remarks, that the only circumstance which has invariably preceded or attended the appearance of the epidemic, in the district of Geneva, has been its presence, at or near the same time, in the neighbouring countries. Facts, which together with the progressive character that, in common with cholera, Influenza assumes, warrant, he thinks, the assigning the two diseases a position in our nosological arrangements distinct and separate from that of all other epidemics.

The spread of the disease, being thus evidently due to other influences than any ordinarily recognisable atmospheric changes, we might inquire whether the influence of electric phenomena could afford a clue to the cause of the diffusion of the epidemic, were not the observations hitherto made, too few and imperfect, to enable us to arrive at a satisfactory conclusion.\*

It might be inferred, that the catarrhal form which epidemics have so generally assumed, was, to a certain extent, due to rapid changes of temperature ; and the breaking out of the epidemics of 1837 and 1847, on the sudden setting in

\* The question of the cause of the epidemic is ably discussed in the Report of the Registrar-general.

of cold weather, after a period of unusual warmth, would seem to countenance the idea. It will, however, be seen, from the reports of the progress of each epidemic, that the period of the commencement of the disease, has varied too much in different parts of this and other countries visited, for one and the same sudden and extreme atmospheric change to have acted, even to the extent of an exciting cause. In the recent attack, though the weather scarcely varied throughout the country, the disease was anything but uniform in the times of its manifestation in the scenes of its ravages, while some places entirely escaped.

The precise nature of the cause or causes of the epidemic of Influenza, we must, therefore, for the present, regard as involved in the obscurity that veils the origin of epidemics generally. There can, however, be no doubt, that the more common predisponents to disease, such as defective drainage, want of cleanliness, overcrowding, impure air, deficient clothing, innutritious or too scanty food, &c., powerfully conduce to the prevalence and fatality of the affection.

By an interesting calculation, the Registrar-general has shown that, in those districts of the metropolis in which the rate of mortality is ordinarily low, the increase of deaths by the recent Influenza was but moderate, although, in the districts which in all seasons have a high rate of mortality, the increase was in the highest degree significant and extraordinary. In the Lewisham districts, for example, including Blackheath, Sydenham and Eltham, the ordinary rate of mortality is 17 per 1000 annually, which the epidemic raised to 27; while in the St. George's in the East district, the ordinary rate is 29, but during the epidemic mounted to 73: so that while in the former, the increase was only 10, in the latter, it was 44 per 1000, showing more than four times the number of sufferers in the one district than in the other.

An interesting instance of a local epidemic, characterized by complications of a very similar character to those in the more severe class of cases of the recent Influenza, and directly traceable to local causes, is related as having occurred among the troops in garrison at Nantes, in the year 1841.\* The disease affected the soldiers of two regiments, one of which was newly raised, while the other contained many conscripts. These regiments were quartered in barracks, which were so over-crowded, that the air of the rooms at night became intolerably offensive, and the windows were obliged to be opened; the drain of the fosse d'aisance was also obstructed. The food was of bad quality, and the conscripts had been compelled to join the regiment within a certain time, and to make forced marches in the rain in consequence. A third regiment of lanciers, quartered in different barracks, and placed altogether in more favourable hygienic circumstances, was unaffected by the epidemic, neither did it extend to the town. The disease assumed the form either of simple or of acute capillary bronchitis, and, in the latter shape, proved extremely fatal. It first showed itself in September, 1840, in a soldier, in whom typhoid fever was complicated with suffocative catarrh. In January, 1841, scarlet fever and measles prevailed, and in February, March, and April, almost every soldier received into hospital, presented the acute bronchial complication when admitted, or subsequent to admission, and it was especially frequent with the eruptive fevers. In March and April, it was combined with diphtheritis, pneumonia, pleurisy, and typhoid fever; swelling of the parotids, and discharge from the ears, were also common. The typhoid fever continued prevalent after the catarrhal affection had disappeared.

In this instance, it might have been questionable how far

\* Archives Générales de Med., 4 me serie, T. 3. And Gaz. Med. 1843.

the severe pulmonary affections might not have resulted from infection, had it not been distinctly mentioned, that the suffocative symptoms were not perceptible in patients admitted into the hospital from the town, and that their cases throughout were of a slight character. It is, therefore, evident, that the causes necessary to the development of the typhoid and pulmonary affections were similar, and that they consisted in the unfavourable hygienic circumstances to which the soldiers of the two regiments were exposed. The exciting cause of the pulmonary affections, was probably cold, taken during the night, from the sudden chill occasioned by opening the windows.

Cases are related by different writers, of persons affected with Influenza, visiting parts of the country in which the epidemic was not prevailing, and their arrival being followed by the appearance of the disease in those with whom they came in contact. Facts of this kind, when free from ambiguity, are certainly strong evidences of contagion. They appear to show, indeed, that whatever may be the ordinary mode of diffusion of the disease, it is capable of being occasionally conveyed by contagion. I cannot but regard it as worthy of remark, that while four persons, two nurses and two patients, took the disease in the wards of the hospital, during the recent epidemic, and had severe attacks, these cases all occurred in two wards in which many Influenza patients were under treatment; while in a third ward, into which no case was admitted, both nurses and patients escaped the disease altogether, or had it so slightly as not to require any medical attendance.

It has before been stated, that the fatality, and probably also the prevalence of the disease, is materially increased by the operation of the common morbid causes; and it is therefore gratifying to find, that the improved sanitary condition of

the metropolis during the last century, and probably also the less degree of want and destitution in the population, have already led to a great decrease in the number of deaths from these forms of epidemic disease. Thus, while the average weekly mortality in the nine weeks of the recent epidemic was 980, had the population been as great in the years 1837, 1833, 1743, and 1733, as in 1847, they would have been 914, 914, 1636, and 1677 respectively. Nor can I better conclude this short treatise, than by referring once more to the Registrar-general's Report, in which a powerful appeal is made in favour of increased attention to the sanitary condition of the metropolis and of the country generally. Our ignorance of the essential causes of epidemics may prevent our guarding against their periodic appearance: but we may hope, by more enlarged and enlightened attention to sanitary measures, to mitigate, to a great extent, their severity and the number of their victims.



## ILLUSTRATIVE CASES.

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CASE 1.—*Epidemic Catarrhal Fever, complicated with slight Capillary Bronchitis—Recovery.*—Edward Dardell, aged 20, a labourer, admitted on the 29th of November.

He had been suddenly taken ill on the 24th, with vomiting, pain in the head and chest, and cough. These symptoms had continued to increase up to the time of his admission, and he had been incapable of sleeping at night, and had taken no food.

*November 29th.*—He complains at present of cough, and expectorates a frothy fluid mixed with some solid sputa of a yellowish colour. He has pain in the chest, more especially in the right mammary region, which is increased by coughing. There is considerable difficulty of breathing; the respirations are short and hurried, and number 40 in the minute. The pulse is 116, and very feeble; the tongue is covered with a thick white-brown fur in the centre. There is no tenderness of the abdomen. The face and lips are livid, and the hands slightly so. There is an herpetic eruption on the left side of the upper lip and the left angle of the mouth, which he states appeared three days ago. He complains chiefly of severe headache.

The chest is throughout resonant, both in front and behind. At the base of the left dorsal region, slight sibilant rhonchus with roughness or fine crepitation, is audible on forced inspiration; and there is also slight crepitation in the right mammary region. He was directed to take a powder, containing 10 grains of Dover's powder and of nitrate of potash at bed-time, and half a grain of potassio-tartrate of antimony

with oxymel of squills, compound tincture of camphor, and tincture of lobelia every three hours.

*December 1st.*—Pulse 76 and quiet ; skin cool and moist ; the tongue more moist and less furred ; sputum slightly adhesive, but thinner and more frothy ; respirations, 32 in the minute, and fuller ; slight sibilant and sonorous rhonchi are audible in each dorsal region. To continue the medicines.

*3rd.*—Skin cool, pulse quiet, cough easier ; the sputum consists partly of a spumous portion and partly of a thin fluid. The sound on percussion is natural in all parts of the chest. There is still slight sibilant and sonorous rhonchus with some roughness, audible, on forced inspiration, in the dorsal regions. The lividity of the face is nearly gone. He still complains of some pain in the right breast. To take 1 ounce of the cough-mixture of the hospital, with 15 minims of tincture of lobelia, every four or five hours.

He was discharged cured on the 6th, there being at that time still some roughness with the inspiration in the dorsal regions.

*CASE 2.—Epidemic Catarrhal Fever with slight Capillary Bronchitis—Recovery.*—Elizabeth Durnford, aged 18. When admitted on the 27th of November, she stated that she had been ill for one week, and was first seized with shivering, pain in the head and chest, and sore throat. To these symptoms succeeded cough with slight expectoration and difficulty of breathing ; but she is habitually subject to shortness of breath. The bowels were confined. Some mild aperient medicine was given to her, a blister was applied to the chest, and she was directed to take the common cough-mixture of the hospital, with 15 minims of tincture of lobelia, every four hours. On the 30th, she was much prostrated, and the cough was very troublesome. She was directed to have two

ounces of brandy during the day, to continue the mixture, and take in addition night and morning, pills, containing 4 grains of the compound ipecacuan powder, and extract of hyoseyamus, with 2 grains of camphor. The following day, a mixture containing 5 grains of the sesqui-carbonate of ammonia, with half a drachm of the compound tincture of camphor, 10 minims of the tincture of lobelia, and 1 ounce of the decoction of senega, was substituted for that before prescribed.

On the 4th of December, the following notes were taken:—She complains much of difficulty of breathing, which is increased at intervals. There is great prostration of strength. The pulse is 100, and somewhat sharp, but feeble. The respirations 28 in the minute, and very feeble. The lips are pallid, and there is no material lividity of the face. The cough is severe, and occurs chiefly in paroxysms, which come on only at long intervals. The sputum is scanty, and consists of solid masses of a whitish-colour, composed of small pellets aggregated together, and having but little air intermixed. The chest is everywhere sufficiently resonant on percussion, but the right side is fuller and more rounded than the left. On careful auscultation, the only abnormal sound which can be detected, is some harshness or roughness, heard more especially in the dorsal regions, after a full inspiration made voluntarily, or after a paroxysm of coughing. Elsewhere the respiratory sounds are so feeble, as to be almost inaudible. To continue the medicines.

*December 6th.*—Since the last date, there is great improvement both in her appearance and strength. She has much less cough, but still expectorates a small quantity of tenacious and solid sputa, of a whitish-yellow or greenish colour, composed of separate small portions. The pulse is 92, of better volume and quiet. The respiration is quiet, 24, in

the minute. There is little or no lividity of the faec. She complains of pain in the left side. On auscultation the respiratory sounds are good in front, but there is still some harshness of the inspiratory sound in the dorsal regions, and perhaps some slight crepitation in the right dorsal region. The medicines to be continued as before, and three ounces of wine substituted for the brandy. She was allowed meat on the 9th, and was discharged cured on the 11th.

During the whole course of the disease, in this case, the chest was carefully examined each day, and no decided physical signs were at any time detected. The respiration was uniformly so feeble, as to be almost inaudible, and in the dorsal regions, full inspiration was generally accompanied with slight sibilant sounds, and some degree of harshness, or fine crepitation.

The two previous cases must be regarded as instances of acute capillary bronchitis, subsiding before the disease had reached the stage of secretion, or at least before secretion had occurred to any material amount. If the more characteristic signs of the disease were wanting, especially in the latter case, those of ordinary bronchitis were equally absent, and the general symptoms, the degree of prostration of strength, and the severe dyspnoea, clearly associate the cases with the more decided examples of the disease which follow.

CASE 3.—*Epidemic Catarrhal Fever complicated with severe Capillary Bronchitis—Recovery.*—Mary Neate, aged 19, admitted November 25th. She had been suddenly taken ill four days before her admission, with pain in the stomach, head, loins and chest, together with difficulty of breathing, and a hacking cough. She was at first directed to take the usual cough mixture, with pills of extract of hyoseyamus and Dover's powder; on the 29th, the following notes were taken.

When seen the day after her admission, there was an herpetic eruption on the right side of the upper, and on the left side of the lower lip. Yesterday, she had a blister applied between the shoulders. She has now a severe cough, and expectorates a considerable quantity of mucopurulent, and slightly frothy sputum. The respirations are 36 in the minute, regular, somewhat laborious, and attended with pain. She is not incapable of lying down, but prefers to sit upright in bed. The pulse is 140, and extremely feeble. The tongue is covered with a white-brown fur in the centre, and is red at the tip and edges. There is some flushing of the face, and the lips are slightly livid. At the lower part of the left dorsal region, there is some deficiency of the resonance on percussion, and crepitation is there heard. To take 1 ounce of the common cough mixture, with 15 minims of the tincture of lobelia every four hours; and a pill composed of 4 grains of Dover's powder and of hyoseyamus, with 2 grains of camphor, every night at bed-time, and the same divided into two doses during the day.

*November 30th.*—Pulse 132, feeble. Tongue covered with a whitish-coloured fur. She feels easier, and has expectorated a large quantity of sputum of a slightly adhesive character, a brownish green colour, and containing some air. She has not much cough. She still prefers sitting up in bed, and complains of much difficulty of breathing, though she can lie down. There is some deficiency of resonance on percussion, in each dorsal region, and wheezing and roughness in those situations on drawing a full inspiration.

*December 1st.*—Pulse 132, feeble. Tongue covered with a patchy-white fur, and the papillæ red. Sputum slightly adhesive, homogeneous and spumous. The face is a little flushed. The respirations are 24 in the minute, laborious and irregular. The chest yields a naturally clear sound when percussed, every-



where except at the lower part of the dorsal regions, where there is some dulness, and on forced inspiration, slight sonorous rhonchus is heard.

*3rd.*—Yesterday there was some improvement in the general symptoms, the respiration was fuller and freer than before, and the pulse was slower and of better volume. She was directed to take 1 ounce of the decoction of senega with 4 grains of the sesqui-carbonate of ammonia, 15 minims of the tincture of lobelia, and half a drachm of the compound tincture of camphor every four hours, and to continue the pills.

To-day the sputum is frothy, very little adhesive, somewhat scanty, and of a greenish-yellow colour. The cough is hard and frequent. The pulse 104, and feeble. The tongue somewhat red at the edges and tip, and fured at the centre and root. The respiration is fuller and easier. Some crepitation and sub-crepitation is audible in the posterior regions of both lungs. To have a blister applied to the chest.

*4th.*—Pulse 115 to 120, and very feeble. There is some lividity of the face. The respirations are 28 in the minute, and fuller. She complains of some pain in the chest, and the cough is very severe, more especially at night. The sputum is copious, of a muco-purulent and spumous character, and intermixed with portions of a transparent appearance. There is some fine crepitation heard with the inspiration, in the posterior parts of the chest, and a little sonorous rhonchus, with the expiration. The mixture has produced sickness. To take a smaller dose of the mixture at intervals, and an emetic of sulphate of zinc and ipecacuan, each ten grains, immediately.

*5th.*—The operation of the emetic was productive of considerable exhaustion, but she expectorated much muco-purulent secretion, and has been easier since, having coughed less, and being able to resume the recumbent position. The sputum



is homogeneous, frothy and less adhesive. The respirations are 36 in the minute, and easy; the pulse 96, and feeble. The crepitant and sub-crepitant rhonchi are audible, on forced inspiration, in the dorsal regions; but on ordinary inspiration, the only physical signs are slight sibilant and sonorous sounds, heard both with the inspiration and expiration; on the right side there is some fine crepitation at the base of the lung.

6th.—The pulse is 112, and fuller. The respirations 36 in the minute, short and rapid. The sputum is copious, yellowish-coloured and thinner, and much intermixed with air. The crepitant and sub-crepitant sounds are audible posteriorly, with the inspiration, and sonorous rhonchus with the expiration. To repeat the emetic and continue the mixture and pills.

7th.—She is by no means so well. The surface on which the blister was last applied, is inflamed and extremely painful. The pulse is 140 and very feeble; the respirations 36 in the minute. To repeat the emetic and continue the mixture and pills. Two ounces of brandy to be given daily.

8th.—Pulse 96, of better volume; respirations 36, less hurried and laborious; the sputum thinner and containing more air. She has not much cough, and expectorates with less effort. The cough is, however, more troublesome at night. She complains of constant singing in the ears. In front the respiration is attended with sonorous and sibilant rhonchi; and behind, especially towards the bases of the dorsal regions, sub-crepitant and crepitant sounds are heard.

9th.—She complains of severe pain, on full inspiration at the lower part of the left side. The respiration is more accelerated and irregular. The cough is more severe. The pulse 104, feeble; the sputum more tenacious, but containing much air. The physical signs continue as before. To take a mixture containing the infusion of serpentary, compound tincture

of camphor, ipecacuan wine, and tincture of lobelia, every four hours, and 2 grains of calomel and a quarter of a grain of opium, three times daily.

10th.—The cough is easier, the sputum tenacious, and containing small air-bells; the pulse 120 of better volume. The pain in the side is entirely relieved. The respirations are 36 in the minute.

11th.—Sputum moderate in quantity and containing air, very tenacious. Pulse 92, quiet; respirations 32 in the minute, fuller; less cough; tongue slightly dry, and with a whitish-coloured fur. She has taken six powders, and the gums are becoming spongy. To continue the mixture and take another powder at night.

13th.—The difficulty of breathing having become more urgent yesterday, and there being also pain in the chest, and the sputum having acquired a more tenacious character, and being of a brownish hue, an emetic was given, and a mixture containing one-eighth of a grain of the potassio-tartrate of antimony, with compound tincture of camphor and oxymel of squills in 1 ounce of decoction of senega, was directed to be taken every three hours. A powder of 2 grains of calomel, and 1 of opium, was also given at bed time. The operation of the emetic afforded much relief. The cough is now less frequent and severe; she breathes more freely, and is in every way better. The gums are slightly affected; the mixture has not produced vomiting, but she has perspired freely. The pulse is 120, and soft; the respirations 36 in the minute, fuller, and easier. The sputum is less tenacious, has a brownish colour, and contains small globules of air. To continue the mixture and powder.

14th.—Pulse 116, feeble. Tongue slightly white at the root; respirations 36 in the minute, full, quiet; face a little flushed. She says that the cough has been somewhat more

troublesome during the night and this morning. The sputum is partly spumous and muco-purulent, partly more solid and adhesive. The gums continue slightly spongy. The sub-crepitant and mucous rhonchi are more distinct than before. To have the emetic repeated, and take the calomel and opium again at night. The proportion of antimony in the mixture to be increased to one-sixth of a grain. To omit the brandy. Fish diet.

15th.—The emetic produced considerable relief, she has not, however, slept comfortably during the night. The pulse is 116 and quiet. The respirations 36. The cough still continues severe, the sputum is expectorated in large quantity and is pale, frothy, and slightly tenacious. To be cupped to 4 ounces between the shoulders, and have a blister applied.

17th.—She has slept better, and has had much less cough. The face is natural; the respirations 36, full and easy. The pulse 100, small but quiet. The tongue slightly furred. The sputum consists of small opaque masses mixed with transparent portions; it contains air, and is only slightly adhesive. On auscultation, some fine crepitation is heard in the lower part of each dorsal region, and the expiratory sound is more distinct and more prolonged than natural. On percussion, a clear sound is elicited everywhere, except beneath the clavicles, where there is some slight deficiency of resonance. She has been twice purged, and has felt sickly after taking the medicine. To reduce the dose to one-twelfth of a grain of the antimony. Chop diet.

19th.—She left her bed yesterday for the first time, but felt extremely weak. All difficulty of breathing is now gone. The pulse is 108, still feeble; the tongue is whitish. She takes her food well, but is still harassed with the cough at night. The sputum is small in quantity, of a pale colour, and contains air. The respiratory sounds are natural, except

at the lower part of each dorsal region, where some roughness and crepitation is heard with the inspiration, and the expiratory sound is prolonged and distinct, and occasionally attended with sub-crepitation.

23rd.—Yesterday, she was directed to take a mixture containing dilute sulphuric acid, compound tincture of bark, and compound tincture of camphor. She now complains of pains in the head and stitches in the limbs. She has but little cough, except in the mornings, when it still continues troublesome. She has but little expectoration, and that is chiefly of transparent mucus. The pulse is 92, quiet and stronger; the respirations are 32 in the minute, full and regular. The tongue continues to be covered with a whitish-coloured fur. Some slight crepitation is still heard on forced inspiration, in the posterior parts of the lungs, and there is very decided prolongation of the expiratory sound.

On the 1st of January, she was discharged cured.

CASE 4. *Epidemic Catarrhal Fever, complicated with Capillary Bronchitis—Old Hemiplegia of left side;—Bronchitis cured, Paralysis relieved.*—Samuel Wilson, aged 26. When admitted into the hospital, on October the 28th, he laboured under chronic paralysis, and no particular notes of his case were taken till the 10th of December. The day before this he had been suddenly seized with a fit, during which he tossed himself about in all directions, foamed at the mouth and moaned, as if in great agony. He said afterwards, that he was conscious but could not control himself; he had previously laboured under a cough and ordinary catarrhal symptoms for two or three weeks. On the subsidence of the fit, at the end of an hour, he was found to have considerable difficulty of breathing, and examination gave evidence of commencing capillary bronchitis; he was cupped the same afternoon

to 12 ounces, and took 4 grains of calomel, and 1 grain of opium immediately, and had the same dose repeated at night.

*December 10th.*—Pulse 112, very feeble; respiration 56, short and hurried. He breathes with a moan, and the right nostril moves very visibly with the inspiration; the left, which is paralyzed does not move. The mouth is drawn a little to the right, and the tongue deviates to the left; it is covered with a white fur; both pupils are small, he speaks imperfectly, and his mind is drivelling; he cannot freely swallow food; he has lost the use of the left arm, and he complains especially of numbness in the little finger. He can walk well, the left leg having recovered its power.

He suffers from a constant sense of suffocation in the throat. He does not expectorate. In front, the resonance on percussion is good; behind, there is some deficiency on percussion above, but the sound is very clear below. The respiration in front has a bronchial character in the supra-clavicular regions, and is attended with sub-crepitation. Behind the respiration has also a bronchial character above, and is attended with fine crepitation and sub-crepitation; lower down there is crepitation on forced inspiration, and this is most marked on the right side. To take one of the powders three times daily, with one-fourth of a grain of potassio-tartrate of antimony, and half-a-drachm of compound tincture of camphor, every hour, and to have a blister applied on the chest.

*11th.*—Sputum scanty, frothy, not adhesive; some portions slightly streaked with blood. The mixture has not produced sickness, and has been taken eight times; he has slept at night. There is a slight herpetic eruption on the right lip, and right angle of the mouth. The respiration is bronchial beneath the clavicles. The sound on percussion is not impaired. Over the whole chest posteriorly, there is audible crepitation and sub-crepitation, the sound being coarser at each apex, and finer at the



bases. These signs are most marked on the left side, and there is some bronchial breathing at the right supra-scapular region. The pulse is 136 ; feeble and irregular ; the respiration 72, full and short. He does not cough materially. He has been freely purged. To continue the powders, and take half a grain of potassio-tartrate of antimony, and 8 minims of tincture of opium every hour.

12th.—He is decidedly better. The bowels have been purged five or six times. The sputum is more copious, consisting of a thin serous portion, with pale phlegm containing air-bells, and masses of mucopurulent secretion. It is diffuent and varies in colour from dark greenish to yellow. The cough is severe. He would have slept had not the state of the bowels disturbed him. Pulse 72 ; soft and of sufficient volume. Respiration fuller, 40, somewhat unequal. Tongue glazed ; slight mercurial fetor of the breath. The mixture has been taken five times without having produced sickness. At each supra-scapular region there is some deficiency of resonance, and below, on percussion, the sound is very clear. The front of the chest is throughout resonant. Behind, the respiration is clearer, above ; it has a somewhat bronchial character in the right supra-scapular region ; below, there is still fine crepitation, and especially towards the base of the left dorsal region. In front the respiration is clear, but with some fine crepitation, below ; and a rough, sonorous or crepitant rhonchus is heard with the expiration. He has taken only one powder. The gums are very spongy, but this they have been from the time of his admission. To omit the calomel and opium and take one-fourth of a grain of antimony, with half a drachm of oxymel of squills, half a drachm of compound tincture of camphor, and half a drachm of spirit of nitric æther, every three hours. Ten grains of compound chalk powder with opium to be taken two or three times a day to arrest the diarrhœa.



13th.—Pulse 72, quiet, of good volume. Tongue clean ; very decided mercurial fetor of breath. The undue action of the bowels arrested by one dose of the powder. The sputum consists of yellowish muco-purulent masses floating in serous fluid. There is not much cough, and less sense of suffocation in the throat. The respirations 36 ; crepitant and sub-crepitant rhonchi are audible in each dorsal region towards the base.

14th.—Pulse 76, quiet ; respiration easy, 40. Tongue clean, a little glazed and chapped. He has passed a good night, has not coughed much, and can swallow much better. The sputum is less copious, muco-purulent, and composed of masses formed of smaller pellets aggregated together. The mixture has not produced sickness, and the bowels have been only once acted upon. The herpetic eruption is subsiding. The chest is sufficiently resonant behind, and is somewhat fuller on the right side than on the left. The respiration is good, but the expiration is everywhere much prolonged, and low down at the dorsal region, there is fine crepitation with the inspiratory, and a coarser crepitation with the expiratory act. In front the chest is less resonant, but not especially so beneath the clavicles ; low down fine crepitation is audible on the right side ; some roughness of the inspiratory sound is perceived on the left, and the expiratory sound is prolonged. The mixture to be taken every four hours. A blister to be applied between the shoulders.

18th.—The respiration is everywhere good, but the expiratory sound is still prolonged, and slight crepitation is heard at the base of each dorsal region. The sulphuric acid mixture with half a drachm of compound tincture of camphor, and the same quantity of compound tincture of bark, to be taken three times daily.

19th.—There being some diarrhœa, he was directed to take

a pill of acetate of lead and opium once or twice daily. He was discharged cured January 4th, 1848.

CASE 5.—*Epidemic Catarrhal Fever with severe Capillary Bronchitis—Death.*—Nora Gorman, aged 50, a nurse in the hospital, was taken ill suddenly, on the afternoon of the 26th, with sense of cold between the shoulders, pain in the head and rigors, followed by transient heats. She had an anti-monial and ipeacuan emetic the following day, and a diaphoretic of Dover's powder and nitrate of potash at night.

*November 28th.*—The emetic occasioned much nausea and retching, which continued for some time, but was relieved by taking a small quantity of brandy. She is to-day much prostrated, the conjunctivæ are tinged of a yellowish colour, but there is no tenderness on pressure in the region of the liver. To have an expectorant and anti-spasmodic mixture, and to take an anodyne at night.

*30th.*—Pulse 120 ; sharp but compressible. Tongue with a white fur towards the root and red at the tip and edges ; severe cough, but very little expectoration ; bowels three times relieved ; she has some tenderness of the right wrist, and complains of pain extending thence to the shoulder. There is no impairment of the resonance on percussion in any part of the chest, and fine crepitation is audible at the posterior part of each lung, especially on the left side, and slightly at the bases of the lungs in front. To have a blister applied to the chest. To take an anodyne at bed-time, and a draught with compound sulphuric æther, aromatic spirit of ammonia, and tincture of lobelia, every two hours.

*December 3rd.*—Expresses herself as feeling better, and has had a more comfortable night. She has not suffered again from the sickness. Pulse 120 ; sharp but very compressible. Tongue

covered with slight whity-brown fur. Has not much cough, and expectorates sputum somewhat adhesive, consisting of masses homogeneous in character, and mixed with a few large air-bells. She has no pain in the chest or elsewhere, but complains much of the difficulty of breathing; she can lie on her back or on either side without inconvenience. The bowels have not been relieved. There is some lividity of the face, and the cheeks are a little flushed. The respirations are 28, full and regular; the skin comfortably warm; the eyes somewhat injected; she felt dreamy and wandering with the draught, but was not delirious.

The resonance on percussion is not impaired in any part of the chest, and there is no bronchial voice or cough. In front there is some sonorous rhonchus and wheezing on forced inspiration, and the same behind, with fine crepitation, above; and sub-crepitation lower down, especially on the right side.

4th—Sputum copious, greenish-yellow coloured, in masses tending to coalesce, little adhesive and mixed with pale mucus and containing large air-bells; the cough frequent, but the sputum is easily raised, and the cough, though very fatiguing, is not attended with pain. She slept well last night without an anodyne, and was not delirious, but complains of dreaming much during sleep. Pulse 120, fuller and more vibratory; skin warm, but moist. Tongue with a slight whitish fur on the surface, and red at the tip. Respirations 40, somewhat laborious, and short, attended with wheezing. In front there is some deficiency of resonance, especially in the right mammary region. There is there fine crepitation with the inspiratory and sonorous rhonchus with the expiratory effort. Behind there is some slight deficiency of resonance in the right subscapular region, and elsewhere the sound on percussion is abnormally clear. In the right dorsal region, there is general fine crepitation, and beneath the scapula some increased resonance of the voice

and cough ; at the base of the right lung there is some sub-crepitation :—on the left side the respiration is clear, except at the base ; but there is everywhere sonorous rhonchus on forced inspiration, and with the expiratory effort. To be cupped to 12 ounces ; to have an emetic of 10 grains of sulphate of zinc and 10 of ipecacuan.

*5th.*—After the cupping last night, she had an anodyne draught with one-third of a grain of morphia, and she expresses herself as decidedly better to-day. The pulse is 112, less full and sharp. The skin cool and comfortable ; she can lie on either side, and has less difficulty of breathing. The sputum is of a yellowish-green colour, and with large air-bells, and having a tendency to coalesce ; it is more copious, and less solid and adhesive. The respirations are 32, fuller and not laborious. The cough less severe. The respiratory sounds are improved in all parts of the chest, but especially on the left side. Everywhere, however, much crepitation is audible, and this is of a coarser character than before, and the expiration is attended with a sonorous rhonchus. She was fatigued with the emetic, but hawked up much phlegm after it. The cupping she thinks afforded her great relief. A draught with sesqui-carbonate of ammonia, compound tincture of camphor, tincture of lobelia, and decoction of senega, to be taken every two hours.

*6th.*—Respirations 32, fuller and easier. Less appearance of lividity in the face ; lips still livid ; skin warm. She slept comfortably after the draught last night. The sputum is more copious, homogeneous, more fluid, of a yellower colour, and mixed with many large air-bells ; it is not adhesive, and is voided with ease. The cough is less severe. In front, respiration is clearer, and behind, crepitation, more or less fine, is generally audible, and at the base particularly, there is some sub-crepitation, with the expiratory sound, and

in other places sonorous rhonchus is heard. The pulse 112, sharp but compressible.

7th.—The hopes of amendment were decidedly less. She had considerable increase of difficulty of breathing, the respirations averaging from 50 to 60; the pulse was about 140, and proportionately weaker; there was more appearance of depression, and more lividity of the face. The sputum had become more scanty, solid and tenacious. She was again cupped to 5 ounces on the front of the chest. The emetic was repeated, and a blister again applied. The following day, the collapse was increased, and the difficulty and rapidity of respiration, and the quickness and feebleness of the pulse still greater; the face was livid, the skin cool and bathed with cold perspiration, and the eyes sunken; she had been very restless and delirious at times.

She died about four, P. M., on the 8th. Permission to examine the body could not be obtained.

CASE 6.—*Epidemic Catarrhal Fever, complicated with Capillary Bronchitis and Pneumonia—Death.* Ann Gilbert, aged 36, a nurse, admitted on the 25th of November. She stated that she was at all times subject to take cold, and generally had a slight cough. She was taken suddenly ill on the 22nd, with headache and pains in the limbs, but had had a cold for two weeks. On the 23rd, she began to experience difficulty of breathing with increased cough. When admitted the pain in the limbs had nearly subsided, but she still complained of headache and cough. She was directed to have a blister on the chest. To take two hyoscyamus, and Dover's powder pills at night, and 1 ounce of the cough-mixture of the hospital, four times daily.

November 26th.—She is very livid, both in the hands and face. The cough is frequent but not severe, and she expect-



torates nummular muco-purulent masses. She still suffers from pain in the head. The pulse is very feeble and irregular, so as to be with difficulty numbered, 95 to 100. There is no material impairment of resonance in any part of the chest, behind; but beneath each clavicle it sounds somewhat dull. At both sides, posteriorly, crepitant and sub-crepitant rhonchi are audible, and especially in the right dorsal region. To have 15 minims of tincture of lobelia added to each dose of the mixture. To take 2 grains of camphor, 3 of hyoscyamus, and 3 of Dover's powder at night. Two ounces of brandy.

27th.—She has rallied somewhat, and slept a little last night. Pulse 116, feeble and unequal. She is compelled to sit up in bed; has a short abortive cough, and is still livid in the face and extremities. Behind there is still audible fine crepitation with sub-crepitation, in the lower parts of each lung; there is also sub-crepitation beneath each clavicle. To have a mustard cataplasm applied between the shoulders. To repeat the pills at night, and take every three hours a mixture, containing infusion senega with spirit of nitric æther, sesquicarbonate of ammonia, tincture lobelia, ipecacuan wine, and compound tincture of camphor. Two ounces of brandy.

29th.—She can lie down for a short time, but prefers the half erect position. The lips are of a purple colour, the cheeks very livid, and the hands are also congested; but the lividity is less than at the time of her first admission. She still complains of the pain in the head. The cough is loose and less frequent; and she expectorates, in considerable quantity, masses of a greenish coloured muco-purulent secretion, with some air, not adhesive. Pulse 136, extremely feeble, skin moderately warm. Respirations 40, short, imperfect, irregular. She has slept a little last night. On percussion, there is deficiency of resonance at the apex of each lung, both before and behind, and especially on the left side. There is very clear



resonance in each dorsal region. Small crepitation and sub-crepitation are audible in all parts of the chest, and, on the right side, there is sibilant rhonchus on full inspiration. There is some bronchial resonance in each dorsal region.

30th.—Face and extremities extremely livid, and lips purple. Tongue with a slight whitish-coloured fur. She has no pain, but complains of the difficulty of breathing, sits half erect in bed, and cannot breathe when she lies recumbent, though she states that she can lie lower than before. She has a frequent but short cough, which, however, is not attended with any pain in the chest. The sputum is in considerable quantity, in nummular masses, somewhat frothy and of a yellowish-green colour. The pulse is 120, feeble and intermittent. Respirations 28, fuller and regular. She does not sleep at night, but has not been delirious. She takes very little food. Anteriorly the chest is very resonant, beneath the clavicles when lightly struck, but yields a somewhat dull sound on fuller percussion; posteriorly the chest is very resonant in the dorsal regions. There are crepitant and sub-crepitant rhonchi audible in all parts of the chest, both before and behind, and the fine crepitation seems giving place to sub-crepitation; on the left side, behind, there is some resonance of the cough and voice; but on the right, the respiration is clearer. There is some sibilant rhonchus, on forced inspiration. To have a mustard cataplasm applied on the abdomen, and a blister on the chest.

December 1st.—Hands and face very livid, feet less so; extremities of natural temperature. Tongue covered with a whitish-yellow fur. She is incapable of lying down at all, and is most easy when leaning forward. She had no sleep last night, but was not delirious. She has a slight abortive cough, which several times last night occasioned retching; she expectorates a large quantity of greenish-coloured mucus in separate

masses, mixed with other sputum of a spumous character. Respirations 24, freer, but attended with wheezing. Pulse 132, very feeble. The blister applied between the shoulders on the 29th, produced little or no effect. The chest yields a clear sound on percussion behind, except at the base of the right dorsal region, and at the apex of the left lung, where there is some dulness. The respiration is on the whole freer, but there is some sibilant rhonchus on forced inspiration; crepitant and sub-crepitant rhonchi are still audible in all parts of the chest. To apply a stimulating cataplasm between the shoulders. To take an anti-spasmodic and stimulant draught, every three hours.

*2nd.*—She is sinking rapidly. The face is less livid, but the eyes are glassy and collapsed. She is lying in the half-recumbent position, and breathing with great difficulty. The sputum is still expectorated and forms large masses, somewhat solid, and of a greenish colour. The feet are cold; the hands are cool and livid. She was delirious at intervals last night, but is now intelligent and has always been collected when addressed. She has little cough from want of power. The pulse is faltering and incapable of being counted. She died the same afternoon about half-past three.

*Sectio Cadaveris*—*December 3rd*, two, P. M.—On opening the chest, the lungs protruded from the cavity. The right lung was almost universally adherent, its anterior margins were somewhat emphysematous, and though from its adhesions of small volume, it was yet very generally inflated. The posterior and inferior part of the lower lobe was of a dark purple colour, and readily lacerable, and exuded on compression, blood mixed with spumous fluid. The large bronchial tubes contained much bloody mucus, and the mucous membrane was reddened and thickened. In the smaller bronchial tubes, the alteration in the mucous membrane, became more

marked, till especially in the lower lobe, it was of an intense purple colour, and was decidedly thicker and softer than usual ; the secretion in the medium sized bronchi was of a deep red colour, but on compressing sections of the lung, whitish mucus exuded from the extremities of the capillary tubes.

The left lung was free from adhesions. It was emphysematous at the margins, especially in front, was very voluminous, and did not collapse on being removed from the chest, and but very imperfectly on section.

The posterior part of the upper lobe was consolidated, but of a pale colour, and resembled an œdematous lung, or an emphysematous lung consolidated. On section much thin spumous fluid mixed with pus, exuded. The rest of the lung was also a good deal infiltrated with spumous fluid. The larger tubes contained similar bloody coloured mucus to that in the tubes of the right lung, and the mucous membrane was also injected. These changes were much more conspicuous in the smaller tubes in which the membrane was intensely injected, thickened and softened ; while the cavities of the tubes were distended beyond their usual dimensions by the secretion. The bronchial glands were much enlarged and softened.

The heart was of natural size, weighing  $8\frac{1}{2}$  ounces. The walls of the right ventricle were increased in thickness and very firm. The right cavities were distended with large, firmly coagulated and partially decolorized clots, and these also extended into the branches of the pulmonary artery. The pulmonary orifice was large. The left auricle and ventricle contained imperfectly coagulated blood. The *Foramen ovale* was closed. The aortic valves and aorta were natural, the free fold of the mitral valve was a little thickened and atheromatous. There was some mammillary thickening of the auricular surface of the valves and of the lining membrane of the left auricle.

The systemic veins and the liver were extensively engorged. The spleen was small, with cartilagenous masses on its surface and of a pultaceous consistence. The kidneys were large and engorged, and their surfaces, when deprived of the proper tunic, were coarse. The small intestines displayed no actual disease, but the solitary glands on a large part of the ileum were distinctly elevated, and of a whitish-yellow colour. The aggregate glands were not detectable immediately above the ileo-cæcal valve; but after a few inches, they were found very well marked, distinctly defined, and considerably elevated above the level of the adjacent mucous membrane, and their surfaces marked by the usual small dots or lines. A distinct impression of roughness was given to the finger when passed over their surfaces. There was no redness around them, but the mucous membrane of the plate itself was thicker than natural. The mesenteric glands were not materially enlarged. The cæcum and ascending colour were natural.

CASE 7.—*Epidemic Catarrhal Fever, occurring in a patient under treatment for Disease of the Knee—Acute Capillary Bronchitis; urgent vomiting; suspicion of Phthisis.—Recovery.*—Elizabeth Taylor, aged 19, a servant, admitted October the 18th. She would have been discharged on the 7th of December, had she not been suddenly taken ill on that day with rigors, followed by pain in the head and limbs, and sickness. After the rigors she became hot and perspired freely; she had no pain in the chest or cough, and Mr. Cook prescribed an antimonial emetic for her.

*December 8th.*—She began to suffer from pain in the chest, and cough, and these symptoms increased in severity till the 9th when she was found with a hot skin and thirst, and complaining of pain in the left side of the chest. On auscultation, the inspiration was of a rough or harsh character, and there was some crepitation beneath the right clavicle. She was

directed to be cupped to 10 ounces between the shoulders, to have 3 grains of calomel and 1 of opium at bed-time, and to take a mixture, containing one-eighth of a grain of antimony, every three hours.

10th.—Pulse 132, sharp and feeble. She feels much relieved, but still complains of pain and sense of weight in the chest; but she breathes more freely and with less difficulty than before she was cupped. She does not cough frequently, but this she says is because it occasions her so much pain, that she resists the inclination to cough. She has been more or less sick ever since she took the emetic, and is much prostrated. She expectorates a little glairy mucus. The chest is only sparingly resonant behind, but there is no other evidence of disease, than some roughness of the inspiratory sound at the base of the left dorsal region, on forced inspiration. To take only one-sixteenth of a grain of antimony, with half a drachm of tincture of hyoseyamus, and spirit of nitric æther. To have 2 ounces of brandy. A blister to be applied to the chest.

11th.—The vomiting still continuing, she was directed to have 3 minims of dilute hydrocyanic acid, and 5 of solution of morphia with the effervescent mixture. To take one grain of calomel, and one-third of a grain of opium, three times daily. The brandy to be continued.

14th.—The powders were discontinued, and the acidulated mixture with tincture of bark given.

22nd.—She was worse, the sickness had recurred and was almost incessant. The pulse was very rapid, from 150 to 160. The respirations 44, irregular. The tongue coated with a whity-brown fur and dryish. The cough was frequent and severe, and occasioned distressing pain of the chest. The face was flushed, and she breathed with a moan. There was a decided dull sound on percussion beneath the right clavicle, and the resonance was also somewhat deficient beneath the left



clavicle. In the former situation the respiration was rough; in the latter, feeble. There was also some deficiency of resonance on percussion towards the base of each dorsal region, where respiration was attended with roughness or crepitation and the vocal resonance was increased. A blister was directed to be applied between the shoulders. Two grains of calomel and one of opium to be taken at noon, and repeated at bed-time and in the morning, and a mixture with 5 minims of dilute hydrocyanic acid to be given every four hours. A little brandy to be taken from time to time.

24th.—The sickness was arrested; she had had a pill with one-fourth of a grain of morphia, and 4 grains of extract of hyoseyamus, and had slept comfortably. From this time she steadily improved, and was discharged cured of the acute symptoms, but with suspicion of tubercle in the lungs, on the 29th.

CASE 8.—*Epidemic Catarrhal Fever, complicated with acute Capillary Bronchitis;—Suspicion of Phthisis—Recovery.*—Charlotte Freethy, aged 25, a servant, admitted December the 11th. She was under treatment in the hospital about eighteen months or two years before, and at that time spat blood, and was regarded as phthisical. Subsequently, she had nearly recovered her usual health. The symptoms with which she was admitted, had undergone considerable increase within the last two or three days, but the precise period of her seizure with the acute symptoms was not ascertained. She was cupped to 8 ounces between the shoulders, when first admitted, and took one-fourth of a grain of antimony, with anodynes and diaphoretics every three hours, and 2 grains of calomel, and 1 of opium at night.

12th.—As the antimony had produced considerable nausea and sickness, the dose was reduced to one-eighth of a grain, and the gums being a little spongy, the mercury was sus-



pended ; Dover's powder and extract of hyoscyamus were given at night to relieve the cough.

13th.—The mixture was entirely omitted, in consequence of the distressing sickness caused by it. She complained of severe pain in the left side, and sub-crepitant and mucous rhonchi were audible there posteriorly. She was directed to have a blister applied to the left side, and to take the effervescent mixture, with 4 minims of solution of morphia, and 3 of dilute hydrocyanic acid every four hours, and 4 grains of calomel and 1 of opium at night.

14th.—The pulse is 120, and soft. Skin cool and moist. She coughed up a little blood last night, and to-day what she expectorates is pale, contains air, and is not particularly adhesive. The catamenia are regular. The cough is severe, but easier than before she was cupped. The feverish symptoms have also subsided. She can lie only on the right side. The chest is resonant posteriorly, but less so on the left than on the right side. Above, the inspiratory sound is somewhat rough, and this is especially the case on the left side ; and below, there is a slight sibilant rhonchus, on forced inspiration. In front, the chest is generally sparingly resonant, and especially beneath each clavicle, more particularly the left, and there is some mucous rhonchus and sub-crepitation in other parts of the lungs. The expiratory sound is prolonged, especially on the left side. The powder and mixture were directed to be continued.

15th.—Pulse 112, and quiet. Tongue with a whitish-brown fur. Respiration easier. She has slept comfortably during the night. The sputum is scanty, pale, slightly adhesive, and contains small air-bells. The gums are somewhat spongy. The sickness has subsided, but there is still some tendency to nausea with the cough. The cough still occasions pain in the left side, and the sibilant rhonchus is audible occasionally.

The mixture to be continued. Two hyoscyamus and Dover's powder pills to be taken at night, and one each morning.

17th.—Pulse 136. Skin warm. Tongue with a patchy and dry, whity-brown fur. She still suffers from vomiting and nausea. The gums are sore. She has a severe cough, and perspired much last night. There is slight sub-crepitant rhonchus audible at the lower part of each dorsal region. To continue the effervescent mixture, with 6 minims of dilute hydrocyanic acid, and half a drachm of the compound tincture of camphor. To take 2 morphia and hyoscyamus pills each night. To have 2 ounces of brandy.

18th.—Tongue red at the edges and tips, and with a brown fur elsewhere, moist. She has been less sick, but has no appetite. Pulse 100, quiet. She slept better last night. The pills and mixture to be taken as before, and to have 4 ounces of wine.

20th.—Pulse 128, sharp. Sputum scanty, in small pellets; muco-purulent, not adhesive. Tongue still covered with a brown fur in the centre, and red at the edges and tip. She has less cough.

22nd. — Pulse 112, sharp. Tongue furred. Expresses herself as feeling better. Sputum scanty, muco-purulent. Some cough. 3 ounces of brandy.

24th.—A little tinge of bright blood in the sputum. A blister to be applied to the chest.

27th.—To take the acidulated mixture, with half a drachm of compound tincture of cinchona, and of tincture of camphor, three times daily. To have 3 ounces of wine, and fish diet. From this time she gradually gathered strength, but her cough continued troublesome, and the sputum was occasionally tinged with blood. She suffered from dyspeptic symptoms. The chest beneath the clavicles was much fallen in, and the physical signs gave rise to strong suspicion of the existence

of tubercle. She was discharged greatly relieved on the 14th of February, 1848.

CASE 9.—*Epidemic Catarrhal Fever with Acute Capillary Bronchitis and Lobular Pneumonia ; Active Delirium—Death.*—Alicc Flanagan, aged 30, a hawker. She stated that she had been ill three weeks, labouring under difficulty of breathing, cough and palpitation. On the 13th, however, she had become much worse, and began to suffer from severe dyspnœa. After her admission on the 19th of November, she was directed to have a blister applied to the right side, to take a mixture with one-eighth of a grain of antimony every two hours, and 2 grains of calomel and 10 of Dover's powder at night.

November 20th.—Pulse 130, small and feeble. She breathes more freely, but is much collapsed. The mixture has produced vomiting each time it was taken, and she has been purged four times. In the right dorsal region there is dulness on percussion, and crepitant and sub-crepitant rhonchi are audible in other parts of the chest. In the dull part the respiration is somewhat bronchial. To take 1 ounce of decoction of senega with 20 drops of ipecacuan wine and half a drachm of oxymel of squills every three hours, and 4 grains of the pills of extract of hyoseyamus and Dover's powder, with 2 of sesquicarbonate of ammonia, every four hours. To have beef tea. The following day she was ordered 3 ounces of gin.

23rd.—Pulse 112, extremely feeble, with a kind of double beat. The mixture has produced sickness and vomiting, and she is much collapsed. The face is not livid, but pale, and the surface cold. There is some delirium. She generally sits up in bed. The sputum consists of nummular mucopurulent masses. There are general crepitant and sub-crepitant rhonchi in all parts of the chest, especially in the dorsal regions, and beneath each clavicle, but particularly the left ;

the chest there sounds dull; and sub-crepitation is audible. In the left sub-clavicular region, the respiration has a cavernous character. To take half a drachm of compound tincture of camphor, and of tincture of bark in 1 ounce of decoction of senega, four times daily. To continue the pills and the gin.

24th.—She had passed an extremely restless night, having been constantly getting out of bed. She was continually talking to herself, but answered questions rationally when addressed. The pulse was quiet and feeble, and the skin cool, and there was no lividity of face or evidence of excited action in the brain. The chest symptoms were as before; it appeared that she had been living separate from her husband, and her habits were very intemperate. She was directed to have a blister at the back of the neck, and to take half a grain of morphia, and 6 of extract of hyoseyamus at night, and to have 4 ounces of gin.

25th.—She was still more restless and excited, and had not slept or been quieted by the morphia; the collapse was greater. She was intelligent when addressed, but talked incessantly. She was able to lie down in bed. She had a constant short abortive cough, and expectorated a considerable quantity of mucopurulent fluid. To continue the mixture; to have 4 ounces of brandy, and to take a draught with half a grain of morphia, half a drachm of the compound spirit of sulphuric æther, and half a drachm of aromatic spirit of ammonia, at night.

26th.—She had slept, and was in every way improved in the morning. She was quiet and more collected, but still much collapsed. The mixture and draught were continued.

27th.—The draught had procured rest each night, but the difficulty of breathing was more urgent. To have the quantity of morphia increased. To take one ounce of decoction of senega,

with 5 grains of sesqui-carbonate of ammonia, half a drachm of compound tincture of camphor, 15 minims of tincture of lobelia, and 10 minims of ipecacuan wine, every three hours. To have a blister applied between the shoulders, and to continue the brandy. She died on the 29th.

*Sectio Cadaveris, November 24th.*—Twelve hours after death. Body thin, and somewhat emaciated, left lung adherent to the parietics at the outer and anterior part of the upper lobe by old and firm adhesions. The right lung was free. The substance of the left lung, contained, chiefly in the upper lobe, several small masses of consolidated tissue of a semi-transparent and greyish appearance, but larger than ordinary tubercle; apparently masses of chronic lobular pneumonic condensation. There were also two or three very small cavities in the upper lobe, and the adjacent tissue was dark-coloured, solid and contracted, and the external surface puckered. The right lung was entirely free from these masses, and the bronchial glands, though large and somewhat softened, presented no appearance of tubercle.

Both lungs, but especially the right, were extensively inflated, they appeared as if blown up, so that the whole of the cells were greatly distended with air. They did not collapse when the chest was divided, or the bronchi cut across, and scarcely when the tissue of the lung was incised. The air could not readily be squeezed out by compressing small portions cut off from the lung.

Throughout both lungs, but the left particularly, there were masses of lobular condensation. These were distinctly circumscribed by the inter-lobular cellular partitions, so as to present sharp rectilinear boundaries—including from one to several lobules. The consolidated portions were chiefly situated at the circumference of the lungs, and especially at the edges of the lower lobes; but they also existed in the interior, so as to



give a knotted feeling which might have been mistaken for tubercle. In colour, they varied from pale buff to dark purple, or even bluish; the former colour obtaining when the disease had gone on to the effusion of lymph or pus, while the latter indicated the portions which had only reached the second stage. The masses were in some cases extremely hard, in others soft; and sank or swam in water, according to the degree of condensation. The bronchial tubes of larger size were filled with a thick white mucus, but the mucous membrane was not materially reddened or thickened, or deprived of its natural glistening appearance. The smaller tubes were similarly distended with the creamy fluid, and their mucous membrane was red and somewhat villous in appearance. On section of the lung, the creamy mucus exuded from each small tube, but most copiously from those in the consolidated lobules, and in these it was not mixed with air, while in the others it was spumous. The general substance of the lung was dry, except in the consolidated lobules, and the inflated portions were pale and sparingly vascular. The tubes in the consolidated parts were so distended with mucus as to be considerably dilated. The consolidated parts were depressed below the level of those which were inflated.

The heart was large and flabby. Both ventricles contained dark partially coagulated blood, not decolorized. There was a large patch of old lymph on the surface of the right ventricle. The free fold of the mitral valve was opaque, and a little thickened, and the aortic valves very slightly diseased. The liver and spleen were large. The kidneys also were of large size, and the tuniæ propriæ somewhat adherent; and the exposed surfaces coarsely granular, but without appearance of deposit.

The skull was remarkably flat in front, and unusually thick. The brain was altogether small, weighing only 42½ ounces avoird. The anterior lobes were of unusually small size. There

was some subarachnoid effusion and opacity, and thickening of the arachnoid membrane. The ventricles contained a very small amount of fluid. The consistence of the organ was natural, and its substance was generally pallid and bloodless.

CASE 10.—*Epidemic Catarrhal Fever with acute Capillary Bronchitis ;—Phthisis ;—Death.*—Jane Ellis, aged 18, admitted November 25th. She stated that she had been habitually subject to cough since she had scarlet fever, when five years of age. She had been suffering more from affection of the chest for some time before admission, and had been worse for four days. A blister was applied to the chest, and she was directed to take 2 hyoseyamus and Dover's powder pills at night, and the cough mixture four or five times daily.

November 27th.—Pulse 130, sharp. Tongue covered with a whity-brown fur in the centre, and moist; red at the edges and tip. She complains of pain in the head, chest and loins, but has not much cough. She is much prostrated, and has been sick this morning. She was found to have a sore on the vulva, and was directed to use the lotio eupri sulphatis three times daily. On the 30th, the blister was repeated.

December 1st.—Pulse 120, sharp; but very compressible. Tongue red at the sides, and brown in the centre. In front, the chest is very imperfectly resonant on the whole of the left side; on the right side, the resonance is good. Behind, the same dulness exists over the whole of the left side, and the right is full, rounded, and resonant. The left side, on the contrary, is flat and contracted, and there is a lateral curvature of the spine. Beneath the left clavicle the respiration is cavernous, and somewhat of the same character beneath the right clavicle; but the vocal resonance is not materially increased in the latter situation. In other parts of the left

side anteriorly, the respiration is attended with general crepitant and sub-crepitant rhonchi; on the right side it is much clearer. Posteriorly, there is much crepitation and sub-crepitation over the whole surface, but especially on the left side, and there is there a distinct bronchial souffle with the cough. The face is not much flushed, and the lips are of a good colour. The fingers are clubbed, and the nails incurvated. The extremities are livid. She complains of soreness in the throat. She is able to lie down in bed. She has not a very severe cough, and does not expectorate much. The sputum is solid, of a greenish colour, and in masses. To have 5 grains of the sesqui-carbonate of ammonia, 10 minims of tincture of lobelia, 10 of ipecacuan wine, and 1 ounce of decoction of senega, every three hours.

*2nd.*—Pulse 128, large; but compressible. Skin warm. Tongue red and glazed at the edges, and brown in the centre. She slept comfortably at intervals last night; the sputum is moderate in quantity, and consists of solid masses, composed of separate pellets of a pale colour, and containing little air. To have 2 ounces of brandy.

*3rd.*—Sputum in larger masses, than before; it has more tendency to coalesce, and contains some large air-bells; it is intermixed with more solid portions and is muco-purulent, and not in large quantity. She has rallied under the stimulant, but her eyes are very prominent, and she looks prostrated and oppressed. The pulse 132, of good volume, and compressible; the skin warm; the cheeks somewhat flushed; and the lips livid. The tongue is morbidly red and glazed, with a slight fur; the cough is short, but frequent. She was very delirious during the night, but is now intelligent when addressed. She has taken food. There is less fine crepitation audible in different parts of the chest, and more sub-crepitation and mucous rhonchus, especially on the left side. A

blister to be applied between the shoulders. To have 4 ounces of brandy. To have an emetic of 10 grains of sulphate of zinc, and 10 of ipecacuan directly.

4th.—The emetic operated freely, and she got up a considerable quantity of mucus, but was much exhausted after the exertion of vomiting. She has passed a better night, and was not delirious. Pulse 120, and stronger. The prostration and lividity of the face are less than before. The respirations are 56, short and hurried. The sputum is composed of large masses of a greenish-yellow colour, and very solid; having little tendency to coalesce, and containing only some large air-bells; it appears composed of a series of small pellets. The physical signs continue as before, except that there is now also sub-crepitation at the base of the right side. To be cupped to 5 ounces between the shoulders.

5th.—She passed a very restless and delirious night, and to-day is still more prostrated. The pulse is 124, very sharp, but devoid of strength. Skin warm. There is some lividity of the cheeks and lips. Tongue red, glazed, brown, and dry. She is lying on the left side, and breathing with great rapidity, and with a slight moan. The respirations 52, short and quick. She is conscious when aroused, but lies inactive at other times, and has been very deaf for several days. The physical signs and character of the sputum the same as before. The emetic was repeated last night; but not proving successful, she had a second in half-an-hour; neither, however, produced any material effect, and she died at a quarter past 9, P.M.

*Sectio Cadaveris, December 7th, 1847.*—The right lung projects over a considerable portion of the stenum. It is extremely inflated anteriorly, and covered with a delicate layer of recent lymph. There is a small quantity of sero-purulent fluid in the right pleural sac. There is some puckering of the surface of the lung at its apex, posteriorly, and a small cavity there

exists, containing bloody purulent fluid, and surrounded by consolidated lung, having embedded in it small grey or yellow-coloured tubercles, of different degrees of consistence. In the posterior part of the middle lobe, there is a small recent pneumonic condensation, generally of a pale-purple colour, but with yellowish spots or masses, interspersed through it, and displaying different stages of inflammation. The whole of the posterior part of the lower lobe is condensed, and contains portions in the state of lobular pneumonia passing through various stages, from that of a simple engorgement, to that of purulent infiltration.

The larger bronchial tubes contain much mucopurulent secretion, tinged with blood. In the smaller tubes the mucus is of a pale-whitish colour. The mucous membrane in the larger tubes is injected, but in the smaller, this redness is much more intense, amounting in some places to complete ecchymosis, and is combined with thickening and loss of firmness.

The left lung is closely adherent to the parietes above; and below, there is a loose stringy attachment between the pericardium and left lung, and the parietes. The whole of the upper lobe is excavated, so as to constitute a series of aufractuous cavities. The lung has suffered much compression, and is of very small volume. The lower part of the lung is generally consolidated to various degrees; it resembles a lung affected with lobular pneumonia in different stages, and having the interposed pulmonary tissue subsequently engorged. These portions of lung, indeed, display very characteristically the stages of transition, from simple inflammation to the deposit of a material having every appearance of tubercle;—thus some lobules are simply engorged; others are passing into the pale-grey hepatization; others again are very solid, of a buff colour and granular appearance, much resembling tubercle, and yet others have been resolved into a



caseous material, filling small cavities. There is no appearance of the ordinary miliary tubercles ; but the disease is evidently pneumonia in a strumous habit going on to disorganization, very like the similar change often observed in children.

The whole of the bronchial tubes, especially those of the smaller divisions are very much dilated and their parietes thickened. The bronchial mucous membrane is generally reddened, thickened, and deprived of its smooth glistening appearance ; and these changes become much more conspicuous on advancing from the larger towards the smaller tubes. The whole contains much mucus ;—that in the smaller tubes, being of a pale colour, while the secretion in the larger tubes is sanguinolent. The bronchial glands are much enlarged and softened, but free from tubercle.

A small quantity of bloody serum is contained in the cavity of the pericardium. The heart weighs  $10\frac{1}{2}$  ounces. The right auricle and ventricle are distended with firm decolorized coagula, and the same extend into the smaller divisions of the pulmonary artery. The right ventricle is also permanently hypertrophied and dilated. The cavities on the left side contain some dark coagula. The valves are healthy.

The liver is very large, and its right lobe projects towards the anterior superior spine of the ilium, and is overlapped by the intestines ; it is mottled, coarsely granular, and much engorged. The kidneys are very large, each weighing upwards of 8 ounces, they are pallid and greasy looking, and in the certical portions there are masses of deposit of a light yellow colour. The spleen is large. The mesenteric glands are not generally swollen, though some are larger than usual. The plates of Peyer, in the lower portion of the ileum are mostly distinctly elevated above the adjacent surface, and the mucous membrane covering them is thickened. Their surfaces are studded with small yellowish-white pimples, and the solitary

glands also are distinctly enlarged and elevated. These changes are most decided near the ileo-cæcal valve: they are evidently early stages in the formation of tubercle, and do not resemble the typhoid disease of the glands. In the cæcum and ascending colon the solitary glands are distinct, and the surfaces of some appear slightly abraded. The adjacent mucous membrane displays some rugose redness, and the fæcal matter in those places adheres to it.

CASE 11.—*Epidemic Catarrhal Fever complicated with Pneumonia—Recovery.*—Thomas Saker, aged 15, errand boy, admitted November the 29th. He was taken ill on the 22nd, with sense of cold and shivering, followed by pains in the right side, head and loins. He had been exposed to wet and cold before his attack, and has been ill ever since his first seizure. He complains of pain in the right side, and of painful cough. He breathes with difficulty, but has no expectoration. The tongue is large and moist, and covered with a whity-brown fur. The pulse is 100, and feeble. Respirations 44 in the minute, quick, but tolerably full. The cheeks are a little flushed. The lips and hands are of a good colour. The chest is unequally developed, the right side being full, while the left is small and contracted. The right side is tolerably resonant, the left decidedly dull. He refers the pain to the right side on which he lies. Fine crepitation with some bronchial sound with the cough and voice, is heard on the left side, and there is also some crepitation on the right side. He is very much prostrated, and was livid when admitted; there is a decided jaundiced tinge of the skin generally, and of the conjunctivæ, with tenderness on pressure in the region of the liver. The bowels were somewhat confined till relieved by a house draught. To have a blister applied between the shoulders, and to take 1 ounce of decoction of senega, 4 grains of sesqui-car-

bonate of ammonia, 10 minims of ipecacuan wine, and half a drachm of spirit of nitric æther, every three hours.

*December 1st.*—Pulse 72, quiet, of better volume ; cheeks still somewhat flushed. Respirations 36 in the minute, and full. He has a slight cough, but does not expectorate with it. He has still a slight yellow tinge of the skin and conjunctivæ, and the hands are a little livid. The tongue is clean. The respiration is good in all parts of the chest, except at the left back, where there is some roughness and bronchial sound ; percussion is a little impaired in each dorsal region, but especially in the left. To take with the mixture 7 grains of the pill of hyoseyamus and Dover's powder, 1 grain of camphor, and 2 grains of the sesqui-carbonate of ammonia, at bed time.

*3rd.*—Pulse 76, of good volume, a little sharp ; yesterday it was 88, and feeble. Respirations 32, full and quiet. He has some cough, but does not expectorate. He sleeps well at night. There is still some impairment of the resonance behind, and especially at the left side, and the respiration has a slightly bronchial character.

*5th.*—He was in every respect better and was gaining strength, but complained of pain at the lower part of the left side, especially beneath the ribs, and percussion and palpation detected a considerably enlarged and tender spleen. The chest symptoms were entirely relieved. To have a blister applied over the left hypochondrium. The following day he got up and was discharged cured, on the 7th.

*CASE 12.—Epidemic Catarrhal Fever, complicated with Pneumonia—Recovery.*—Emma Eveleigh, aged 11, admitted November 26th. She stated that she had been taken ill two days before admission, with pain in the side, and difficulty of breathing. The pulse was 144, and feeble. The tongue was

white on the surface, with the papillæ, sides, and tips red. There was some dulness on percussion in the right dorsal region, with dry respiration. She was directed to have a blister between the shoulders, and to take one-sixth of a grain of the potassio-tartrate of antimony, with 15 minims of compound tincture of camphor and of oxymel of squills, and 7 minims of tincture of lobelia, every three hours.

*November 27th.*—Pulse 136, very feeble. Face a little flushed. Tongue with a thick whitish-brown fur in the centre, and the papillæ red. She lies on the right side, and has a severe cough, but does not expectorate. She breathes with a moan. The respirations are 44 in the minute, and somewhat irregular. She complains of pain in the right axilla, which seems to proceed from a gland which is swollen. There is dulness on percussion in the right dorsal region, and sub-crepitant and crepitant rhonchi are there audible. She slept pretty well last night, and was not delirious. She has not been sick, but has had the bowels twice relieved. To continue the mixture, and take 4 grains of extract of hyoseyamus and of Dover's powder, and 1 grain of camphor, at bed time.

*29th.*—Pulse 136, and feeble. Tongue white, with the papillæ red. She has scarcely any expectoration, and does not cough much. She lies on the right side, and does not complain of pain in any part of the chest. There is dulness on percussion in the right dorsal region, and bronchial respiration and sub-crepitant and mucous rhonchi are there audible. She has not been sick, but has had the bowels twice relieved. She complains of thirst. She was slightly delirious last night.

*30th.*—Pulse 136. Tongue with a white fur, and the papillæ red. Respirations 40, easy. Skin comfortably warm. Cheeks and lips of a good colour. She does not cough much, and has only a slight brownish-coloured expectoration.

She complains of general soreness, but has no pain in the chest. There is decided dulness on percussion at the right back, with bronchial resonance with the cough and voice. There is general sub-crepitation audible in the dull parts, on forcible inspiration. She has not been sick. To have a blister applied to the right back.

*December 1st.*—Pulse 108, very feeble. Tongue with a slight white fur, and the papillæ red. Skin cool and moist. She coughs, but does not expectorate. The respirations are short, 48, and attended with wheezing. She had a restless night, but was not delirious. She has no pain in the chest. She prefers reposing on the left side, but can lie on either side, or low down in bed. Behind the chest sounds generally less resonant on the right than on the left side, and is entirely dull at the lower part of the right dorsal region. On the right side, the respiration is deficient at the base, and bronchial respiration is there heard, and a bronchial souffle at the root of the lung, with the cough. On the left side, the sonorous rhonchus is audible. In front, the chest is freely resonant, except towards the back on the right side. There is there, some crepitation, and generally over the front of the chest sonorous and sibilant rhonchi have been for the last two days audible on full inspiration. To take 8 minims of ipecacuan wine and of tincture of lobelia, and 2 grains of the sesqui-carbonate of ammonia, in half an ounce of infusion of senega, every three hours.

*2nd.*—Pulse 104, feeble and intermittent. There is still dulness on percussion at the lower part of the right back, and sub-crepitation is there audible, with general sibilant and sonorous rhonchi in other parts of the chest. She has not coughed much, does not expectorate, and has slept well last night, but is much prostrated. Two grains of sesqui-carbonate of ammonia to be added to each dose of the mixture ; half an ounce of brandy to be taken in arrow-root daily.



3rd.—Pulse 112, of better volume. Tongue clean. She is lying on the right side, and has no pain in the chest. The respirations are 36, quiet, but attended with wheezing. There is still crepitation and sub-crepitation on forced inspiration in the right dorsal region, and feebleness of respiration at other times.

4th.—Pulse 100, quiet. She has but little cough, and does not expectorate, and can lie on the right side with comfort. Tongue clean; respirations 28, and full. In front, the chest sounds everywhere clear; but at the back, the right side is a little less resonant than the left. The left, sounds quite clear, except very low down. Behind on the right side, there is no morbid sound in ordinary breathing, but the respiration is feeble; on forced inspiration, however, there is still some slight sub-crepitant and mucous rhonchi audible posteriorly at the bases of the lungs, and a little sibilant rhonchus, and some degree of bronchial resonance with the voice and cough. At the lower part of the left back there is very slight sub-crepitation on forced inspiration. Elsewhere respiration is good. A blister to be applied to the left side, and to have beef tea.

From this time she continued to improve, and was discharged cured on the 8th of December.

CASE 13.—*Epidemic Catarrhal Fever complicated with Pneumonia;—great prostration of strength and torpor of mind;—Recovery.*—James Attwood, aged 37, porter at the London Docks, admitted December the 7th. It was ascertained that he had been in a very depressed state of mind and declining in health for some time, his indisposition being ascribed to grief at the loss of his wife. He subsequently stated, that he has been ill six weeks. At the commencement of his illness he suffered from sickness and vomiting, and received some medicine from a dispensary in the east of London. He recovered sufficiently to resume his work for ten days, and was

again compelled to leave it on the 3rd. When admitted he was extremely collapsed, and his mind in so torpid a state, that an answer could with difficulty be procured to any question. He presented symptoms of fever, with chest affection, and the usual debility of influenza. A mixture with one-eighth of a grain of the potassio-tartrate of antimony, with half a drachm of spirit of nitric æther, compound tincture of camphor, and oxymel of squills, was directed to be taken every three hours, and a scruple of the diaphoretic powder at night ; a blister to the pit of the stomach.

*December 11th.*—The chest symptoms had increased, and the sputum was of a decidedly pneumonic character, being russet-coloured, adhesive, scanty, and intermixed with air-bells ; on examination, however, the only physical sign which could be detected was a bronchial sound with the respiration in the supra-scapular spaces, especially on the left side, and some roughness with the inspiration in each dorsal region ; but his breathing was so feeble, that it was with difficulty the sounds could be heard. He was cupped between the shoulders to 8 ounces, and was directed to take one-fourth of a grain of the potassio-tartrate of antimony, every three hours, and 2 grains of calomel, and 1 of opium at bed time.

*12th.*—He is stronger and more intelligent than when first admitted. The pulse is 112, and very feeble ; the skin cool and moist. The respiration 28, and very feeble. He has a frequent hard cough ; on percussion there is some deficiency of resonance at each supra-scapular region, and especially on the left side, and at the lower part of the right dorsal region. On auscultation there is some roughness with the inspiration in the supra-scapular regions, with deficiency of respiration. In front there is a general feebleness of respiration, and the effort to respire fully, occasions pain. The sputum is very characteristic of pneumonia. He was sickly after taking

four doses of the mixture, but has continued it since without any return of vomiting. The bowels have been once relieved, and he has passed a better night. To continue the powder and mixture, and have a blister applied to the chest.

13th.—Pulse 112, and soft. Skin comfortably warm. He is slightly incoherent in conversation. His memory is defective. The tongue is covered with a chapped, thick and brownish-coloured fur. The sputum is adhesive, but more spumous than before. He says he is free from pain. He has taken the mixture six times, and has been once sick to-day; the bowels having been confined, he has taken a senna draught. To reduce the dose of the antimony to one-eighth of a grain. To have a blister on the nape of the neck, and take brandy and arrow-root occasionally. The powder to be given at night as before.

14th.—He looks less torpid, and is more intelligent and stronger. He has slept more comfortably at night. He does not cough much, and lies in any position in which he is placed; he expectorates sputum of a pneumonic character. Tongue dry and brown in the centre. It is impossible from his extremely feeble respiration, to elicit any satisfactory information as to the state of the lungs, but there is some dullness on percussion at both apices. The pulse is 96, large, but very compressible and vibratory. The respirations are 20 in the minute, extremely feeble. The gums are becoming spongy. The bowels have been once relieved. He has not had any further vomiting. His cough is better. Though obtuse in intellect, he is not delirious. To continue the antimony, and take 4 grains of calomel, and half a grain of opium at night.

15th.—The sputum is still very tenacious, and intermixed with some air-bubbles; it contains portions of a very dark-brown colour. He has vomited twice. The pulse is 80. The tongue moist and covered with a brownish-white coloured fur. He is more torpid than before; the pupils are contracted and

sparingly sensible to light. There is no loss of power over any of the limbs, though he lies in any position in which he is placed. He breathes very slowly and feebly, and does not cough much. To have the head shaved and a blister applied on the crown. To take 3 grains of calomel, and one-sixth of a grain of opium, three times daily. To continue the antimony, and have 4 ounces of brandy daily.

16th.—He was sick twice yesterday; his bowels were once relieved. The sickness has not since returned, but the bowels have acted once naturally. The pulse is 76, and soft. The tongue less furred, but still white in the centre, and with a brown streak down each side. The sputum is adhesive, russet-coloured and contains much air. The urine has been several times examined under the suspicion of its being albuminous, but nothing, except a deposit of lithates, has been detected.

17th.—The pulse is 92, and feeble. Tongue cleaner. The appearance of prostration and torpor less. The sputum scanty but less adhesive and paler. The gums are decidedly affected. He is still troubled with the sickness, but the bowels act naturally, and he takes his food better. To continue the powder at night; to have 5 grains of the sesqui-carbonate of ammonia, 8 minims of ipecacuan wine, one-eighth of a grain of potassio-tartrate of antimony, and 1 ounce of the decoction of senega every three hours; 4 ounces of brandy daily, as before.

18th.—Pulse 88. Tongue covered with a thick white fur on each side. He is occasionally sick, and vomits bile, but has no diarrhoea, and is altogether stronger and more intelligent. The sputum is losing its russet-colour, and becoming mucopurulent. The gums are spongy. The mixture to be continued; to take another powder to-night, and have 4 ounces of brandy as before.

19th.—There are no other physical signs detectable on careful auscultation than the extreme feebleness of the respi-

ratory sounds, and the dulness at the apices of the lungs which is now most marked beneath the right clavicle. He is still occasionally sick. To omit the antimony in the mixture, and take a powder at night. The following day the sickness still continuing, he was directed to take the effervescent mixture with 4 minims of dilute hydrocyanic acid, every three hours. Two ounces of brandy and 4 ounces of wine to be taken daily.

21st.—The mouth was decidedly affected with mercury, the gums being very spongy, the breath fetid, and the salivary glands swollen. The cough and expectoration had nearly ceased, and he was in every respect improved.

22nd.—He got up for a short time, and was directed to have 4 ounces of wine daily, with the half-meat diet.

23rd.—He had a full allowance of meat and a pint of porter, and the acid mixture with tincture of cinchona was prescribed. He was discharged cured on the 30th.

CASE 14.—*Epidemic Catarrhal Fever complicated with Pneumonia ;—Relapse, with Diarrhœa, severe Rheumatic pains and profuse Perspirations—Recovery.*—Thomas Salt, aged 27, a labourer, admitted December 23rd. When admitted he laboured under the ordinary symptoms of Influenza, with predominant chest complication. He stated that he was suddenly seized while in the street, on the 17th, and fell down ; at first he had decided rigors, followed by flushes of heat, and these again alternated with transient chills. He was directed to take a mild febrifuge medicine.

December 24th. — Pulse 76. Tongue somewhat dry. He has a frequent but not very severe cough, and expectorates a glairy-brownish coloured and adhesive secretion, mixed with thin serous sputa. He complains of a sense of tightness, but has no pain in the chest. There is some deficiency of resonance



on percussio at the base of the left lung posteriorly, and crepitation is there audible. The respirations are 28 in the minute, and feeble. The skin is slightly jaundiced, and bathed with acid perspiration. The conjunctivæ have an icteroid tinge. He has been somewhat purged from the commencement of his illness, but has no tenderness or inflation of the abdomen. To continue the mixture, and have a mustard cataplasm on the abdomen.

He had so far recovered on the 27th as to be allowed the half-meat diet, and the following day the full diet, and had left his bed for several days, when, on the 2nd of January, he had a sudden relapse, commencing with rigors followed by heat, and this again by profuse perspiration, under which he became extremely depressed, and the pulse slow and feeble. He complained of great general soreness and pains in the limbs. A copious eruption of sudamnina made its appearance on the skin. He was now directed to take the acidulated mixture with tincture of cinchona, every three hours, and 3 ounces of wine.

*January 4th.*—The sweating still continues, and he is much prostrated. The pulse is slow and very feeble. The skin is moderately warm. He has urgent thirst. The tongue is covered with whitish fur, and is somewhat dry. The bowels have been purged twelve times since yesterday. To have 4 ounces of wine daily. To take the pills of acetate of lead and opium, twice or three times daily.

*6th.*—Pulse 80, feeble. Tongue large and pale. He is less prostrated, but complains of pain in all the limbs and entire inability to move himself. The bowels have been only twice acted upon. The sudamnina have disappeared. There is no cardiac murmur, but the heart's sounds are extremely feeble. To continue the wine. To take 5 grains of the sesqui-carbonate of ammonia, 4 minims of the tincture of colchicum, and 1 ounce of infusion of serpentary, every three hours.

11th.—The mixture has produced no obvious effect, except that of relieving the pains which are now entirely gone. He is up to-day and is gaining strength. To recur to the acidulated mixture with the compound tincture of bark, and have a pint of porter, and the full meat diet. He was discharged cured, on the 13th.

CASE 15.—*Epidemic Catarrhal Fever complicated with Pneumonia ;—Relapse—Recovery.*—William Brooks, aged 15, porter at a coal shed, admitted October the 16th. He stated when admitted, that he was taken ill on the 13th, and he then presented the ordinary symptoms of Influenza. He was directed to take a saline mixture, containing one-eighth of a grain of the potassio-tartrate of antimony, and 2 minims of tincture of opium, every four or five hours.

October 17th.—He had an emetic of 15 grains of ipecacuan, and half a grain of tartarized antimony, and was directed to take the saline mixture every two hours.

18th.—He is much oppressed and torpid. The tongue is red and dryish, and somewhat furred towards the root. The teeth are covered with sordes. The skin is cool and moist. The pulse is 96, very feeble. He has a troublesome cough, but does not expectorate. He has been purged four times, and there is some tenderness in the abdomen. On percussion there is found a deficiency of resonance at each dorsal region, with sonorous and sub-crepitant rhonchus. The emetic produced free vomiting : he has not had epistaxis. To have the head shaved, and a blister applied between the shoulders. To take 3 grains of the sesqui-carbonate of ammonia, and one ounce of infusion of serpentary, every three hours.

19th.—Pulse 96, quiet and soft. Tongue red at the tip, and with a slight brownish fur at the root. He has less appearance of oppression, and is more intelligent when addressed. He coughs severely, but does not expectorate, appa-

rently from want of power. The respirations are easy and regular, 24 in the minute. In the front of the chest the respiratory sounds are natural, except at each base, where there is a dry expiratory sound ; posteriorly, there is a sonorous rhonchus with the inspiration and, inferiorly, crepitant and sub-crepitant rhonchus. The chest is very sparingly resonant in the dorsal regions. To add to each dose of the mixture, 10 minims of ipecacuan wine, and continue it every two hours.

20th.—Pulse 84, and quiet. Tongue still dryish, but cleaner. He expresses himself as feeling much better, and has less cough. He does not expectorate. There is still some slight crepitation towards the bases of the dorsal regions.

On the 22nd, he was directed to have the acidulated mixture with bark, and the half-meat diet, and he was allowed to leave his bed ;—on the 26th, however, he was seized with rigors which continued during the greater part of the day.

27th.—He is now complaining of intense headache, and is breathing with a moan. He has urgent thirst, and the tongue is dry, and covered at the root with a whity-brown fur. The pulse is 136, large, but very compressible and vibratory ; the skin is hot and dry. The respirations are 36 in the minute, hurried, short and imperfect. He has not much cough, and does not expectorate. The respiratory sounds are deficient over the whole of the right dorsal region, and crepitant and sub-crepitant rhonchi are there audible, and also, to a less extent, both at the apex and base of the left lung. To have a blister applied to the nape of the neck, and take one-fourth of a grain of the potassio-tartrate of antimony every two hours.

28th.—He slept very little last night, but was not delirious. The bowels have been twice relieved. The mixture did not produce vomiting, and was consequently given every hour for six times, after which he vomited freely, and was much relieved. He has not now any cough, and does not expec-

torate. The skin is hot. The pulse 124, moderately full and compressible. The tongue covered with a whity-brown fur. He wheezes much and moans with the respiration. There is decided deficiency of resonance at the base of each lung, and especially on the right side; there is also deficiency of resonance at the apex of the left lung, and, in the latter situation, there is a bronchial sound with the voice and cough, with mucous rhonchus; the same exists to a less extent at the base of each lung; elsewhere the respiratory sounds are clearer on the right side. The respirations are 44 in the minute and fuller. Since the occurrence of vomiting, the mixture has been taken only every two hours. A mustard cataplasm to be applied on the chest, and 15 minims of the tincture of hyoscyamus added to the mixture.

29th.—He is decidedly better. The pulse is 88, and quiet. The skin cool. The tongue covered with a brownish fur. The respirations are 30 in the minute, and fuller. The apex of the left lung continues dull on percussion, and there is also dullness at the base of the left dorsal region and at the apex of the right lung. On the left side, in front, there is still some remains of roughness, and a bronchial character of the respiration at the apex. There is slight crepitation in the base of each dorsal region. The mixture to be taken only every four hours, and a blister to be applied to the chest. There has been no return of sickness, and the bowels have only once acted.

30th.—Pulse 72, quiet. He has not much cough, and has expectorated a little mucus of a moderately adhesive character, and of a greenish colour. He has slept well. There is still some roughness with the respiration at the base and apex of the left lung, posteriorly. He has had no sickness, and the bowels have been only once relieved. To take only one-eighth of a grain of antimony every four hours.

*November 2nd.*—He has to-day vomited his food, but, with

that exception, the mixture has not had any perceptible effect since being given in the smaller dose. He is convalescent, and the chest symptoms have disappeared. To have the acidulated mixture with the compound tincture of bark.

4th.—He was ordered a chop daily. He was discharged cured on the 10th.

CASE 16.—*Epidemic Catarrhal Fever, complicated with Capillary Bronchitis, Intestinal Disease, and Erysipelas and Absorbent Inflammation—Death.*—Job Gregory, aged 18, a farm servant, admitted November 23rd. When received into the ward he was much collapsed, and no satisfactory information as to his previous state of health could be obtained. He stated, however, that he had been working on the London and York Railway, near Barnett, and had been more or less indisposed for sixteen days. The pulse was then 120, small and feeble. The tongue was red at the tip and edges, and covered with a whity-brown fur in the centre. The skin was cool. The face was much flushed, and he moaned incessantly. He had a hard and frequent cough, but did not expectorate with it. Crepitant and sub-crepitant rhonchi were extensively audible in the dorsal regions. There was diarrhœa with some inflation of the abdomen, and tenderness on pressure in the right iliac region. He was directed to have a blister applied between the shoulders, and to take one ounce of the infusion of serpentary, with 5 grains of sesqui-carbonate of ammonia, and half a drachm of tincture of camphor, every three hours. To have beef tea and milk.

November 24th.—The bowels having been purged several times daily, he was directed to take powders, containing 4 grains of Dover's powders, and 4 of hydrargyrum cum cretâ, three times daily; and to have 3 ounces of port wine, with arrow-root during the day.



26th —Pulse 136, feeble. He coughs less than before, but has more difficulty of breathing, and continues to moan incessantly. The tongue is red at the tip and edges, and whity-brown in the centre. The bowels have been eight times relieved since yesterday, and much more frequently during the two preceding days. He has taken his food better for the last day. The respirations are 24 in the minute, full, but unequal. There is now no material inflation or tenderness of the abdomen. He has slept better. The respiration is attended with crepitant and sub-crepitant rhonchi. To take a grain and a half of acetate of lead, with 12 minims of acetic acid, and half a drachm of the compound tincture of camphor, every three hours. To have pills, containing 2 grains of sesqui-carbonate of ammonia, 2 of camphor, and 4 of extract of hyoscyamus, every night and morning. Six ounces of port wine.

27th.—He has picked his nose during the night till it bled. There is a large purple-coloured patch on the left leg. He states that he was in regular work for some time before his admission, and had plenty of fresh meat and vegetables. He has never passed blood in the stools, but has been purged eight times since yesterday. The tongue is very red at the tip and edges, and with a slight fur in the centre. The pulse is 112, of a better character. He is very delirious, and moans to himself, though he is rational when addressed. He has taken the wine and his food pretty well. His cough is very frequent. There is some tenderness, but no gargouillement in the right iliac region.

29th.—He has continued to pick his nose, and last night denuded several of the toes of their nails. He is much collapsed. The cheeks are flushed, and become almost purple-coloured with the cough. The tongue is red and dry at the tip and edges, and brown in the centre. He wheezes much, and has a short and frequent, abortive cough. He was very delirious last night,

and did not sleep at all. The bowels have latterly been relieved only four times daily. The pulse is incapable of being accurately counted, but numbers from 140 to 150 beats in the minute. It is occasionally intermittent. There are six or seven small acuminate pimples on the skin of the abdomen. The abdomen is painful on pressure, but not inflated. The chest is freely resonant in front, and the respiration is there good, except at the base of the right side where crepitation is audible. Behind, at the right back, there is deficient resonance, and the cough has a bronchial sound ; at this point, crepitation is heard, and at the base of the same side, sub-crepitation. On the left side, crepitation is extensively audible. A blister was applied to the chest yesterday, but has not produced vesication. The acetate of lead was discontinued this morning. To take 6 grains of Dover's powder, 6 of extract of hyoseyamus, and 2 of camphor, at bed time ; and to have one ounce and a half of decoction of senega, half a drachm of compound tincture of camphor, 5 grains of sesqui-carbonate of ammonia, and a half drachm of tincture of cinchona, with 10 drops of ipecacuan wine, every three hours. The wine as before.

*December 1st.*—He expectorates a little muco-purulent fluid of a greenish-yellow colour, mixed with sputa more or less bloody. The tongue is red, and covered with a brownish-white fur in the centre. He breathes very rapidly, and wheezes and moans incessantly. He has had a restless and delirious night, and has not slept at all. The bowels have been several times relieved, but he has passed little except flatus. The acuminate eruption is still on the abdomen. The face is very much flushed. The cough dry and frequent. The pulse is 150, and extremely feeble. The physical signs continue as before, but there is also a distinct bronchial souffle heard with the cough in the right dorsal region. To take 2 ounces of brandy in addition to the wine. The medicines to be continued as before.

*2nd.*—Pulse 140, very feeble. The cough is frequent, but there is no expectoration. The voice and cough have a peculiar husky sound, which was first noticed several days ago. The skin is warm. The tongue dry and brown. The bowels have been four times moved, but very scantily. He did not sleep last night, and got up several times. He is intelligent when addressed. To have a draught, containing one-third of a grain of morphia, with half a drachm of the aromatic spirit of ammonia, and half a drachm of the compound sulphuric æther, to-night.

*3rd.*—He slept more comfortably during the night, and is better this morning. The face is less livid, but he has still the same hoarse cough and voice. A small bed sore is forming on the right hip. The pulse is 130, rapid and feeble. The respirations are 52, short and laborious. The sputum is scanty, muco-purulent, and composed partly of small masses intermixed with air. The bowels have been twice relieved. A blister to be applied to the nape of the neck. The medicines and draught to be continued.

*4th.*—The hands are perfectly purple, and the lividity of the face continues as marked as before. He slept well last night, but moans and talks less coherently, and has the same husky voice and cough. The bowels have been once relieved. The sputum is small in quantity, adhesive, and mixed with dark blood.

*5th.*—In addition to the dark ecchymosed patch on the left leg, which appeared several days ago, there are now erysipelatous patches, spreading from the toes upwards to the knee, with streaks of redness in the course of the absorbents. There is some appearance of erysipelas on the right foot. He complains of pain in the loins, and moans incessantly in the same husky voice as before, and the cough has the same character. The hands and face are very livid. The pulse is 150 to 160, very feeble. He had the draught last night, but

did not sleep, and to-day he is less coherent, and talks more to himself. To continue the medicine and draught, and increase the quantity of brandy to 4 ounces.

6th.—The pulse is feeble, and too rapid to be numbered. The tongue dry and brown. The husky character of the cough and voice continues. The sputum is scanty in quantity, yellow and brownish-coloured, and interspersed with paler portions. He slept last night. The erysipelas has spread on both legs, and forms patches on different parts of the lower extremities. He died the following morning.

The examination took place at noon on the 6th. The body was found somewhat emaciated. Several patches of a purple colour, still existed on the legs, especially one on the inner side of the left knee.

The right lung was universally adherent by old cellular attachments, and the pulmonary tissue was throughout much engorged, and only retained its crepitant character in front, where it was somewhat emphysematous. On section, the lung was found extensively affected with lobular pneumonia, in the form of masses, varying in size from one to several lobules, of a very solid consistence, and surrounded by tissue much less consolidated. The bronchial tubes were filled with mucus, and the membrane was reddened and softened, the redness and softening being much more decided in the smaller tubes. The left lung was free from attachments, except at the posterior part of the upper lobe, where there were some old stringy adhesions. The pulmonary tissue was emphysematous in front, but posteriorly it was much loaded with blood and serum, and especially at the base; the posterior part of the upper lobe was engorged. There were also some portions of lobular condensation, but these were less conspicuous than in the other lung, from the loading of the rest of the pulmonary tissue.

The bronchial mucous membrane was reddened, and the tubes contained pale mucus; and these changes were especially marked in the lower parts of the lung. The smaller tubes were filled with mucus, and in the lower lobes were considerably dilated; and the mucous membrane was extensively reddened and softened. Much bloody spumous fluid escaped from the lung, when compressed, after section. Several of the bronchial glands were enlarged and softened; one contained old cretaceous tubercle bounded by a dense sheath.

The heart was healthy; but the right ventricle and auricle were distended with moderately solid and partially decolorized coagula. The organ was generally flaccid.

The epiglottis and edges of the *cordæ vocales* were ulcerated; and the tonsils, epiglottis, fauces, and upper part of the larynx, were covered by a soft and delicate layer of false membrane, which was readily washed off, and left the subjacent membrane smooth and but little injected.

The mesentric glands were somewhat large, but those of the meso-colon were very considerably swollen, reddened, and softened. Some of the plates of Peyer were much enlarged, and elevated above the adjacent mucous membrane. Portions of the plates were also found still more extensively reddened and swollen, and in places superficially abraded. These changes affected chiefly the aggregated glands some distance above the termination of the ileum; those in the immediate neighbourhood of the cœcum being free from all appearance of disease.

In the cœcum, the solitary glands were generally considerably enlarged, and surrounded by thickened and reddened mucous membrane. Near the ileum, some had the small yellow sloughs on their surface, while others presented slight excavations. On tracing the canal towards the rectum, the mucous membrane was found in the ascending and transverse colon to



be studded with small oval excavations, generally only superficial, and surrounded by more or less reddening of the surface. These ulcers extended to the sigmoid flexure. The large intestine contained faecal matter of a pale yellow colour, and moderate consistence. There was no apparent disease of the vessels of the limbs, or of the larger venous trunks.

CASE 17.—*Epidemic Catarrhal Fever with Rheumatic complication—Otitis—Recovery.*—James Grainger, aged 22, a blacksmith, admitted November the 22nd. When admitted he complained of the ordinary symptoms of Influenza, with rheumatic pains; and stated that he had been ill three days. He was directed to have a daphoretic powder, and a mixture containing colchicum was prescribed. The following day as the colchicum had produced both sickness and vomiting, it was replaced by the simple saline mixture containing one-eighth of a grain of antimony. He complained much of pains in the head, back, and limbs, and of distressing restlessness at night. Ten leeches were applied to the head, and he was directed to be wrapped in the hot and moist blanket.

November 24th.—He had been in the blanket, but had not perspired after it or obtained any relief. He was prostrated, and had bled profusely from the nose; he complained much of pain in the head, and whizzing in the ears, and of extreme sleeplessness, in no degree relieved by the bleeding. The pulse was 100, and very feeble. The tongue covered with a whity-brown fur. There was no pain, tenderness, or inflation of the abdomen. He was directed to have beef tea, and to take the acid mixture with one drachm of compound tincture of bark, every three hours, and a draught with one-third of a grain of the hydrochlorate of morphia at bed time.

30th.—Erysipelas has made its appearance around the leech bites on the temples. A patient was admitted with a

severe attack of erysipelas a few days before into the same ward. He had continued to take the anodyne, but with little or no relief to the pain and restlessness at night. To apply a strong solution of nitrate of silver to the erysipelatous surface, and continue the other treatment.

*December 2nd.*—Pulse 112, large, but compressible. Tongue slightly furred at the root, but moist. Skin warm and moist. He still complains of pain in the head, and of the restlessness at night, and singing in the ears. The draught procured a little ease the first night, but has lost its effect, though the quantity of morphia has been increased to half a grain. The erysipelas has subsided, but considerable œdema of the eyelids and forehead remains.

*4th.*—Pulse 100, large, but very compressible. Tongue with a slight brownish-coloured fur. He still complains of the pain in the head and loins, and states that they undergo great increase each night, so as entirely to prevent his sleeping. There is a soft murmur audible with the impulse of the heart, most distinctly at the base, where it masks the second sound; at the apex it is followed by the second sound, and has a dry croaking character. He sweats much, and the perspiration has a peculiarly sour smell. To continue the draughts, and take 8 minims of the tincture of colchicum and half a drachm of the tincture of hyoseyamus, every six hours; a blister was applied yesterday to the nape of the neck.

*6th.*—Pulse 72, quiet. He has less pain in the head, but still complains of ear-ache and singing in the ears at night. The bowels are relieved twice daily, but he has not been sick. He does not sweat so much, nor has the perspiration so sour a smell.

*7th.*—Pulse 48, and feeble. Tongue slightly white. There is still some œdema of the forehead and eyelids. He has had bilious vomiting, but has not been purged. The skin and conjunctivæ are tinged decidedly yellow, and this has been

more or less the ease from the commencement of his illness. He still complains of the pain in the head and ringing in the ears, undergoing great increase at night and preventing sleep. He is very deaf. To continue the draught and take 5 grains of iodide of potassium, every six hours.

8th.—The bilious vomiting continued till after a draught with 5 minims of dilute hydrocyanic acid was given this morning. He now expresses himself as better, and states that he was free from the noise in the head and pain last night for the first time. The pulse is 60, and feeble. The tongue pale and not furred. He has no pain in the loins, but there is still some œdema about the eyelids. There is a slight murmur with the impulse of the heart, which seems most distinct towards the apex. He has had purulent discharge from both ears. To continue the mixture and take 2 ounces of brandy with arrow root.

10th.—Pulse 72, quiet, and of better volume. Tongue clean, all the pains are gone, and he complains only of extreme weakness. To have a mutton chop daily, and to continue the brandy.

12th.—He is convalescent. To have 2 grains of sulphate of quinine, with 1 of sulphate of iron, and half a drachm of tincture of cinchona, three times daily. On the 15th, a pint of porter was allowed in place of the brandy, and on the 18th, he was discharged cured. At this time, the impulse of the heart was accompanied by a sound of a flapping character at the apex, and at the base a slight murmur was still audible. The discharge from the ear had ceased.

CASE 18.—*Epidemic Catarrhal Fever, complicated with disorder of the Bowels and Liver, and with Rheumatic symptoms—Recovery.*—James Bates, aged 34, a sawyer. When admitted on the 8th of December, he stated that he had been indisposed for three weeks. His bowels were con-

finer, he complained of pain in the head, and had the usual symptoms of fever. Two purgative pills were given, and were followed by a draught in the morning. A cooling lotion was applied to the head, and a saline mixture, containing one-eighth of a grain of antimony, was directed to be taken every three or four hours.

*December 13th.*—The pain in the head was as severe as before, and there was some delirium, especially at night. There was also considerable prostration of strength. He was directed to have the head shaved, to have a blister applied to the nape of the neck, and to take a draught of infusion of serpentary, with 5 grains of the sesqui-carbonate of ammonia, every three hours.

*15th.*—He began to suffer from diarrhœa, and powders containing 4 grains of the compound ipecacuan powder, and 4 of the hydrargyrum cum cretâ, were, in consequence, ordered to be given twice or three times daily. Two ounces of wine, with arrow-root to be taken during the day.

*16th.*—The tongue is covered with a thick whity-brown fur in the centre and at the root, and is morbidly red at the tip and edges. The pulse is 112 in the minute, and is soft and vibratory. The pain in the head from which he has suffered while in the hospital, he states is now gone, but he has a peculiarly irritable manner, and answers questions put to him, very abruptly. The bowels have been twice relieved, and he has in consequence taken two powders. There is a distinct blowing and somewhat rough murmur heard in the præcordia, with the impulse of the heart. The respiration is attended with sonorous and sibilant rhonchi. To have 10 leeches applied to the temples, and take 8 minims of the tincture of the seeds of colchicum, with 20 minims of the aromatic spirit of ammonia, and 40 of tincture of hyoscyamus, in 1 ounce of camphor mixture, every three hours. To continue the

powders according to circumstances, and have 2 ounces of brandy daily.

17th.—Pulse 112, less vibratory. Skin moderately warm. The tongue covered with a yellowish-coloured fur towards the centre and root, and red at the tip and edges. The skin generally has an icteroid tinge, and the conjunctivæ are slightly jaundiced. He has been purged five or six times. He has never had epistaxis, and has not perspired. The cardiac murmur is still audible. The gums are becoming slightly spongy. To reduce the proportion of the tincture of colchicum in the mixture to 4 minims.

18th.—He expresses himself as being free from pain, and feeling better than before, and has taken more food. He has not been delirious, but there is much tremour of the hands. The tongue is dry and brown. He has been purged four times. The pulse is 96, full and sharp, but very compressible. He has not been sick. There is a copious eruption of purple-coloured spots, which fade on pressure, on the abdomen and lower part of the thorax. To continue the mixture as before, and in addition to the brandy, to give 4 ounces of wine in the twenty-four hours. To substitute pills of acetate of lead and opium for the powders.

19th.—The pulse is 108, of good volume, and quiet. The tongue is very dry and brown. The bowels have been only twice relieved, but he has been sick. He was not delirious, but did not sleep last night, having been disturbed by the patient in the bed next to him. The eruption has spread over the thorax, and to the shoulders and thighs. He is very much prostrated, but expresses himself as free from pain. The gums are spongy. To omit the colchicum mixture, and take a draught containing 15 minims of the compound sulphuric æther, and of the aromatic spirit of ammonia, with 1 drachm of the tincture of cinchona, every three hours. To have an



anodyne at night, with one-third of a grain of the hydrochlorate of morphia, in combination with diffusible stimulants. Beef-tea to be given frequently with the wine and brandy.

20th.—Pulse 104, sharp, but compressible. Tongue dry and brown. He has passed a comfortable night after taking the draught, and, though there is still much tremour, he is not delirious. He has not been purged, but the prostration of strength is very great. The murmur is now only feebly audible, near the apex of the heart. The urine this morning is slightly albuminous. The eruption is still out. To have a blister applied to the nape of the neck.

22nd.—The eruption was beginning to fade yesterday. There was an increase of the cerebral symptoms. He slept better last night. The pulse is 92, full, but very compressible. The tongue very dry and brown. He is in an extremely torpid state of mind. He has a hard cough, and complains of a general feeling of chilliness. The eruption is nearly gone, and there are now on the abdomen a few spots of a purple colour, which do not fade on pressure. He makes a full quantity of water; it is acid, of the specific gravity of 1015, and slightly albuminous. The heart's-sounds are feeble, but the systolic murmur is very distinct, and of a rough character. It is heard most intensely below the mamma. The blister not having risen; to have another applied. The acetate of lead and opium pills have been taken since the 17th, once, twice, or three times daily, according to the state of the bowels, but are now to be discontinued. The other remedies to be given as before.

23rd.—The febrile eruption is very nearly gone, but the purpous spots continue distinct. He is more intelligent when addressed, but is still very torpid, and much inclined to sleep. The pulse is 104, of better volume and strength. The tongue is very dry and brown. The bowels have been three times

relieved. He has a troublesome cough. To give the acetate of lead and opium pills again, according as required.

24th.—Pulse 92, very feeble, and occasionally intermittent. Tongue very dry, but less coated. The bowels have been twice relieved. To take the acid mixture, with compound tincture of cinchona, three times daily. The wine and brandy as before.

27th.—The pulse is 80, and quiet. The tongue somewhat moist, with the remains of a yellowish-coloured fur in the centre; elsewhere it is nearly clean. The bowels are regular, he takes his food well, and is altogether much improved. To be allowed the half-meat diet, with a pint of porter.

29th.—He sat up for two hours, and with the exception of a stimulating liniment, ordered for the relief of rheumatic pains in the limbs, required no other medical treatment before his discharge from the hospital on the 10th of January.

CASE 19.—*Epidemic Catarrhal Fever, complicated with disorder of the Bowels and Rheumatic symptoms; great collapse and active delirium—Recovery.*—Frederick Adams, aged 31, a waiter, admitted December the 9th. He stated that he had been ailing for three weeks; his attack having commenced with the usual symptoms of Influenza. He complained at the time of admission of pains in the head, left side of the chest and loins, of a severe cough and of general soreness of the surface with the ordinary febrile symptoms. He was directed to take a diaphoretic of 10 grains of compound ipecacuan powder, and 10 of nitrate of potash, each night at bed-time, and to have the antimonial mixture, with 8 minims of the tincture of colchicum, and half a drachm of the compound tincture of camphor every three or four hours. To have a blister applied over the seat of pain in the chest.

December 15th.—The mixture, which had produced both

sickness and purging, was discontinued, and replaced by one containing the iodide of potassium, with small doses of colchicum and laudanum.

17th.—Yesterday, the diarrhœa still continuing, powders containing 4 grains of the compound ipecacuan powder, and 4 of the hydragryrum eum eretâ, were directed to be taken three times daily. To-day the pulse is 120 and soft. The tongue is covered with a moist brownish-coloured fur, and is red at the tip. He has continued to be much purged and very sick. He talks constantly and incoherently to himself, and was very restless during the night, and frequently endeavoured to get out of bed. He, however, now answers rationally when addressed. His face is pale and sunken, and the expression of countenance wild and anxious. He says that he has less pain in the head. The gums are slightly spongy. To have a draught with 5 grains of the sesqui-carbonate of ammonia, half a drachm of compound tincture of camphor, and 1 ounce of the infusion of serpentary every three hours. To continue the Dover's powder and hydragryrum eum eretâ, and have 2 ounces of brandy during the day in arrow-root. A blister to be applied to the nape of the neck.

18th.—Pulse 132, extremely feeble. Skin bathed in profuse perspiration. Hands and feet cold and livid, to above the wrist. The tongue thickly coated with a brown-coloured and somewhat dry, fur. He has been very delirious all night, and now talks incoherently and constantly to himself. The urine is loaded with the lithates, but is not albuminous. To take one of the acetate of lead and opium pills three times daily; to have a draught with 15 minims of the compound sulphuric æther, 15 of the aromatic spirit of ammonia, and half a drachm of the compound tincture of bark, every hour or two hours. To have 4 ounces of brandy, and 4 ounces of port wine during the day.

19th.—Pulse 112, feeble, but less so than before ; teeth covered with brown sordes. Tongue somewhat moist, red at the tip and edges, and coated on the surface with a thick dark-brown coloured fur. The conjunctivæ are somewhat injected, but the pupils are natural as to size, though sparingly affected by light. He does not complain of any pain. The expression of countenance is less excited than yesterday. The delirium has continued. He hears distinctly. The hands are cool, and blue in patches up to the fore-arms ; the feet are excessively cold, and very livid. The whole surface is bathed in perspiration. The bowels have been three times relieved, but he has not been sick. There is a loud murmur heard with the impulse of the heart, most distinctly beneath the mamma. In that situation it has a rough character, while at the base it is softer. It is succeeded by a somewhat flat diastolic sound. The prostration of strength is extreme. To have a blister applied to the scalp. To increase the dose of the tincture of cinchona in the mixture, to one drachm. To have an anodyne at night, with one-third of a grain of the hydrochlorate of morphia in combination with diffusible stimulus. To continue the wine and brandy.

20th.—He has rallied considerably from the state of collapse. The hands and feet have recovered a more natural temperature, and the skin is of a good colour. He began to improve after the visit of yesterday. He slept calmly at the commencement of the night, but was again delirious on awaking. To-day he is extremely depressed in strength, but is more intelligent and collected. The tongue is moist, but thickly coated with a yellowish-brown fur. The pulse is 104, still very feeble, and the pulsations are unequal in strength and volume. He has no cough, has not been purged or sick, and takes his food well. There is no eruption on the skin ; the murmur is still audible. To continue the medicines and stimulants as before.

22nd.—The pulse is 100, sharp and feeble. The tongue is nearly clean, except towards the root, where there is a slight whitish-brown fur. It is elsewhere morbidly red. The collapse has entirely subsided, and the face is now flushed, and the conjunctivæ injected, and there is some intolerance of light. The bowels have been twice relieved. His skin is cool and moist, and he takes his food well. He slept the last two nights without a draught. The murmur continues.

24th.—An erysipelatous eruption has appeared on the forehead, it being now two weeks since any patient affected with erysipelas was admitted into the ward. The tongue is swollen, red, slightly furred and indented by the teeth. The breath has a very fetid smell. The bowels have been once relieved. The pulse is 108, full and bounding, but very compressible. The skin is moderately warm and moist. He is more torpid than before, and is much inclined to sleep. The murmur is now nearly confined to the base. It is, however, very distinctly audible in that situation. The erysipelatous surface to be washed with a strong solution of nitrate of silver. To take the sulphuric acid mixture, with compound tincture of bark ; to have 3 ounces of wine, and half a pint of porter.

27th.—Pulse 80, quiet, and of good volume. The erysipelas has not spread, and is now subsiding. The tongue is clean. He is more intelligent, and has gained much strength. To be allowed the meat diet and a pint of porter. He was discharged cured on the 10th of January.

CASE 20.—*Epidemic Catarrhal Fever with Abdominal Complication assuming the remittent form ; endocarditis*—*Recovery*.—William Knight, aged 26, a labourer. When admitted, on the 14th of December, he stated that he had been ill for two days, having been seized on the evening of the 12th, after exposure to cold, with rigors, followed by the



usual symptoms of Influenza. His bowels were confined. An emetic and aperient draught were prescribed.

*December 15th.*—Pulse 136, and very compressible. The skin is moderately warm. He has some cough; the bowels have been four times relieved. The abdomen is inflated, and there is the sensation of fluctuation in the ileo-cæcal region. He complains of pain in the head, abdomen and loins. He has had copious epistaxis. To have a cataplasm of mustard and linseed meal applied on the abdomen. To take 5 grains of the sesqui-carbonate of ammonia in 1 ounce of the infusion of serpentary every three hours. To have a diaphoretic powder of 10 grains of Dover's powder, and 10 of nitrate of potash at night.

*16th.*—Pulse 120, of tolerable strength and quiet. He has expectorated a little glairy mucus, and some sputum tinged with blood, which seems to have come from the throat. He has some cough, but it is not very severe. The bowels have been twice relieved. There is a slight jaundiced tinge of the countenance. The inspiration is attended with a dry sonorous rhonchus in all parts of the chest. He states that he has for some time experienced much breathlessness. To be cupped to 5 ounces between the shoulders; to have a blister applied. To have the milk diet.

*17th.*—Pulse 112, very compressible. Tongue covered with a slight white fur. He has again bled very copiously from the nose. He complains of pain in the head, more particularly over the left eye, and in the abdomen. He is somewhat delirious, especially at night. The bowels have been twice relieved. The jaundiced hue of the skin continues. There is a murmur audible in the præcordia, with the impulse of the heart, most distinctly at the apex; the second sound has a flat character. The impulse of the heart is forcible. To have the head shaved. To add to each dose of the mixture, 5 minims of the tincture

of colchicum, and 20 of the compound tincture of camphor. To take one of the acetate of lead and opium pills, once, twice or three times daily, according to the state of the bowels. To have 2 ounces of brandy.

18th.—Pulse 80, quiet. Tongue large, indented and covered with a slight fur. The pain in the head is relieved. He is also free from pain in the bowels, and there has been only one motion. The cheeks are somewhat flushed. There is still some slight jaundiced tinge of the skin and conjunctivæ. He has but little cough, and the matter expectorated consists of transparent mucus, sometimes slightly streaked with blood. He has not had any return of the epistaxis, and has not been sick. He is, however, very much prostrated. To omit the pills so long as he continues free from diarrhœa. To take the mixture only every four or five hours. To have 4 ounces of wine with 2 ounces of brandy.

19th.—The pulse is 76, of somewhat better character. The appearance of prostration is less. He has but little cough. The jaundiced hue continues. The tongue is clean, but very pallid and moist. He had had no return of epistaxis. The bowels have been only once relieved. He slept better last night, and was not delirious. He says he is entirely free from pain. To take a draught containing compound sulphuric æther, aromatic spirit of ammonia, and compound tincture of cinchona in infusion of serpentary every two or three hours. To have an anodyne of one-third of a grain of hydro-chlorate of morphia at bed-time.

20th.—There is a great improvement in his general state. The pulse is 88, and stronger. The tongue clean. An eruption of acuminate pimples or small pustles has appeared on the upper part of the thorax. The diarrhœa has recurred, and he complains of pain in the left side. He has no cough, has not bled from the nose, or had the profuse perspirations. He

slept more comfortably last night, and awoke refreshed in the morning. He takes his food pretty well, but is still very greatly prostrated. The systolic sound heard beneath the mamma has a flapping character, but there is no distinct murmur. To take the acetate of lead and opium pills as before.

22nd.—The pulse 72, and stronger. The tongue clean, pallid, indented and moist. The eruption has disappeared from the skin. The diarrhoea is checked. There is still a slightly jaundiced tinge of the skin and conjunctivæ. The urine has been repeatedly examined during his attack, and has been found acid, high-coloured, and contains a copious sediment of lithates, but has never been albuminous. To take the sulphuric acid mixture with tincture of bark.

On the 24th, he was allowed to leave his bed for a short time, and was directed to have the meat diet, and to take a pint of porter in the place of the wine and brandy. On the 25th, however, he had a severe attack of rigors followed by heat, sweating and great prostration of strength; these recurred on the 26th, and on the following day he was found with a full bounding pulse, a hot skin, and complaining much of pain in the left side of the chest; and, on auscultation and percussion, there was deficiency of respiration and of resonance low down at that part. He was cupped to 5 ounces, and was directed to take 2 grains of calomel and 1 of opium immediately, and to repeat the dose at bed-time, and afterwards twice daily. The following day he was relieved, and on the 29th the respiration was natural, but there existed a distinct and somewhat superficial sounding murmur, which accompanied the systole of the heart, and was audible over the whole præcordia. It was succeeded by a flat diastolic sound. The pulse was 76, of good volume and firm. The tongue was clean, but large and indented. He had not had any recurrence of the rigors, and was gaining strength. A blister was

applied over the region of the heart, and the tonic mixture was again prescribed.

*January 4th.*—Yesterday he was allowed the meat diet. He has gained much strength. The pulse is natural as to frequency, quiet and sufficiently firm. The tongue continues large and pallid, but is free from fur. He has no pain any where, and has a good appetite. The murmur has entirely disappeared. He was discharged cured on the 6th.

# T A B L E,

Showing the number of cases of certain forms of Disease admitted into the ROYAL FREE HOSPITAL, from February, 1846, to February, 1848.

DISEASES.	1846.												1847.										1848.	
	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.
Fever .....	16	3	3	3	5	10	9	6	2	5	2	..	4	4	9	7	6	8	9	11	11	11	5	5
Dysentery ..	2	1	...	...	1	8	10	2	1	1	1	2	1	1	3	4	3	3	1	...	3	1	1	1
Erysipelas..	3	2	...	3	2	...	1	1	2	1	1	1	...	1	...	...	1	1	2	3	3	2	...	3
Ague .....	...	1	1	...	1	...	...	...	1	1	...	...	2	5	2	...	2	2	...	2	1	1	...	1
Influenza .	2	8	7	5	1	2	1	...	1	3	6	3	9	4	7	1	2	2	4	3	5	19	15	9
Pneumonia																								
Bronchitis.																								
Scorbutus ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	1
Total cases of all kinds admitted ..	125	103	115	85	90	60	47	46	41	42	34	31	43	47	60	49	50	65	56	63	65	64	50	53



# METEOROLOGICAL TABLE,

With the number of Deaths from certain forms of Disease, registered during the Six Months ending April 1st, 1848.

COMPILED FROM THE REGISTRAR-GENERAL'S REPORTS.

WEEKS ENDING	Mean height of		Wind.	Rain in inches.	Total Deaths.	Zymotic diseases.	Influenza only.	Diseases of the						Rheumatism, &c.	Childbirth.
	Barometer.	Thermometer.						Chest.	Heart.	Brain.	Digestive organs.	Kidneys			
Oct. 2, 1847	30.095	51.7	E.	0.00	1143	317	2	227	29	169	80	8	4	9	
" 9, ..	29.644	53.0	Var.	0.72	1022	324	1	215	43	133	79	17	8	18	
" 16, ..	29.749	54.8	Var.	0.05	953	309	..	224	24	112	91	14	9	21	
" 23, ..	29.627	53.5	s.s.w.	1.04	967	296	..	233	34	132	87	10	5	13	
" 30, ..	30.145	49.8	s.s.w.	0.28	945	276	1	243	27	133	79	11	12	13	
Nov. 6, ..	30.077	50.5	s.w.	0.39	1052	326	2	281	40	120	85	17	11	13	
" 13, ..	29.941	49.8	s.s.w.	0.03	1098	322	4	299	43	131	97	9	11	17	
" 20, ..	30.119	40.7	s.w.	0.14	1086	344	4	293	30	132	86	16	13	13	
" 27, ..	29.618	46.5	s.s.w.	0.85	1677	415	36	634	52	174	96	16	10	11	
Dec. 4, ..	29.820	47.9	s.w.	0.71	2454	638	198	994	77	231	113	14	17	19	
" 11, ..	29.304	46.7	s.s.w.	0.58	2416	783	374	913	50	177	114	17	11	20	
" 18, ..	29.752	48.0	s.	0.09	1946	629	270	657	52	178	79	15	14	18	
" 25, ..	29.651	35.4	Calm.	0.03	1247	389	142	391	24	125	62	11	5	14	
Jan. 1, 1848	29.872	34.8	Vy. var.	0.28	1599	420	127	497	48	203	87	15	9	23	
Average of week for the previous six years					1046	211	..	333	34	157	74	9	7	14	
" 8, ..	29.627	40.3	s.	0.23	1364	420	102	458	23	164	70	7	8	9	
" 15, ..	30.142	36.0	N. Var.	0.09	1457	388	102	527	50	180	65	13	10	12	
" 22, ..	29.643	32.5	& N.N.E.	0.28	1401	379	89	542	34	138	67	20	3	9	
" 29, ..	29.987	29.1	E.	0.09	1457	340	56	574	46	143	63	19	9	14	
Feb. 5, ..	29.882	40.8	s.s.w.	0.37	1478	364	59	581	50	156	72	11	7	10	
" 12, ..	29.346	45.4	s.s.w.	0.86	1324	313	47	523	32	152	73	11	6	15	
" 19, ..	29.808	41.7	s.s.w.	0.19	1131	302	27	378	28	120	58	15	7	11	
" 26, ..	29.089	45.0	w.s.w.	0.74	1145	308	33	401	34	129	50	17	4	10	
Mar. 4, ..	29.322	43.1	s.w. & N.	0.81	1114	270	18	335	35	136	79	16	6	9	
" 11, ..	29.578	41.7	s.w.	0.82	1070	261	11	391	30	128	67	12	4	7	
" 18, ..	29.378	40.7	Var.	0.81	1118	289	10	381	28	130	75	16	6	4	
" 25, ..	29.648	44.7	Var.	0.63	1099	280	16	379	37	117	56	9	5	13	
Apr. 1, ..	29.727	51.2	s.	0.51	1294	289	8	414	49	151	61	15	8	6	
Average of week for previous six years ..					1107	184	..	386	39	138	62	9	8	13	

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